



U.S. Fish & Wildlife Service

Fire Management Handbook



HANDBOOK INTRODUCTION

The purpose of the Fire Management Handbook is to provide general operational guidance for fire management activities in the U. S. Fish and Wildlife Service. The Handbook supplements the policies, objectives, and standards for fire management presented in the [U. S. Fish and Wildlife Service Manual](#) and the [Department of the Interior Departmental Manual](#). Any inconsistencies with the Departmental and Service Manuals will be resolved in their favor.

Throughout the Handbook the term "refuge" is used to describe administrative units of the Fish and Wildlife Service. For the purpose of this Handbook, "refuge" is used in the generic sense to include all lands in the Service land unit system (i.e., refuges, coordination areas, waterfowl production areas, fish hatcheries, research units, educational centers, and other conservation areas established under Service authority). Refuge Manager is also used in the generic sense to include any Service land unit agency administrator.

Separate chapters are issued for planning and program management, operational aspects of prescribed fires, operational aspects of wildland fires, wildland fire investigation procedures and cost determination, and post-fire emergency stabilization and rehabilitation. These five chapters are collectively known as the Fire Management Handbook. Each chapter is further divided into specific sections.

The Acrobat bookmarks and left column provides access to the Handbook. A chapter outline is in **bold**. Individual sections can be accessed from the chapter outline or directly from the left column. Subsections of each section can be accessed from the left column or top of each section.

Specific portions of the Handbook (i.e., forms, plan format outline, etc.) are provided in WordPerfect format for downloading.

A complete e-book version of the Handbook is available below for viewing on line or downloading for viewing off line and printing (requires [Acrobat Reader](#) browser plug-in). Left click to view and print on line. To download and save for off line viewing and printing, right click and select - "Save Target As..." (Internet Explorer) or "Save Link As..." (Netscape) - to download.

[Fire Management Handbook e-book](#)

[Home](#)

[What's New](#)

Last Update: 7/17/03

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

This page was last modified 09/18/03

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U.S. Fish & Wildlife Service

Fire Management Handbook



WHAT'S NEW

- 9/22/03 - [Chapter 5](#) update providing guidance on FY04 policy changes.
- 7/10/03 - Biannual changes include:
 - [1.1.4](#) Interagency Assistance and Coordination
 - [1.5.1](#) Fitness Standards and Requirements and Physical Fitness Exams for Fire Management Positions
 - [2.1.3](#) Contingency Plan
- 8/7/03 - [Interagency Fire Management Plan Template](#)
- 7/10/02 - Biannual changes include:

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)
[FIREBASE](#)
[Prevention](#)
[Planning](#)
[Qualifications](#)
[Financial Mgt.](#)
[Info. Systems](#)
[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)
[Operations](#)
[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)
[Operations](#)
[Fire Use](#)
[WFSA](#)
[Business Mgt.](#)
[Reviews](#)

[Fire Trespass](#)

[Investigations](#)
[Cost Determinations](#)
[Civil Cases](#)
[Criminal Cases](#)
[Glossary](#)
[References](#)

- Update and/or add [9262](#), [9263](#), [9264](#) and [9265](#) financial management information
- Clarification of the appropriate use of [9263 funding for fuel treatment effectiveness monitoring](#)
- Replacing Chapter 5 with the [Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook](#)
- Incorporation of [NWCG Prescribed Fire Complexity Analysis Guide](#) and [Go/No-go Checklist](#) into FWS standards
- Numerous typographical and spelling errors
- 6/4/01 - Conversion to e-book format.
- 4/9/01 - Addition of fuels management effectiveness monitoring guidelines: [2.2.4](#), [1.6 \(subactivity 9263\)](#), and [1.6.1](#).
- 2/28/01 - Complete revision of [Chapter 5](#) and [9262](#) subactivity in section 1.6 to reflect the new Burned Area Burned Area Emergency Stabilization and Rehabilitation policy. Section [1.4](#) also reflects ESR planning changes.
- 2/14/01 - Add FIREBASE (section [1.2](#)).
- 1/2/01 - Guidance clarification of prescribed fire complexity analysis in Section [2.2](#)
- 12/28/00 - Updated Guidelines for Management of 9263 Funding Authority in Section [1.6](#)
- 12/5/00 - Corrected position qualification information in Section [1.5](#).
- 11/3/00 - Inclusion of mandated [Go/no-go](#) Checklist into Section [2.1](#).
- 10/10/00 - The Personnel Work/Rest Guidelines in Section 3.2 were updated to reflect the 14 day assignment requirements.
- 7/17/00 - Sections [1.6](#), 5.1, 5.2, and 5.3 were revised to reflect the new ESR plan review and approval deadlines. The Table of Contents and Index were also updated.
- 6/16/00 - Improved graphics and exhibits in section 3.2 and 3.3 pdf files.
- 6/1/00 - New look! New information?
- New operational guidance relevant to [Service Manual](#) changes. Significant new information in sections [1.1](#), [1.4](#), [1.5](#), [1.6](#), [2.2](#), [3.1](#), [3.2](#), [3.3](#), [3.4](#), and [3.6](#)
- New chapter covering [Fire Rehabilitation and Restoration](#)

[Rehabilitation](#)

This page was last modified 09/18/03

[|Disclaimer|](#) | [Privacy](#) | [Copyright|](#) | [USFWS Main Page](#) | [Webmaster|](#)



U.S. Fish & Wildlife Service

Fire Management Handbook



CHAPTER 1. PREPAREDNESS AND PLANNING

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

1.1 [PROGRAM MANAGEMENT](#) - Revised 3/17/00

1.1.1 [POLICY](#)

1.1.2 [POLICY APPLICATION](#)

National Wildfire Coordinating Group Policy

Wildland Fire - No Approved Fire Management Plan

Wildland Fire - Approved Fire Management Plan

Interpretation of the Appropriate Management Response

Prescribed Fire

Selecting a New Strategy - Wildland Fire Situation Analysis

Basic Situational Guidelines for WFSA Preparation

Understanding the Wildland Fire Management Policy

1.1.3 [RESPONSIBILITY](#)

1.1.4 [INTERAGENCY COORDINATION AND COOPERATION](#)

Interagency Assistance

Coordination

Interagency Mobilization

Multi Agency Coordinating Group (MAC Group)

Agreements and Contracts

Annual Operating Plans

Contracted Protection

Emergency Assistance

FEMA and the Wildland Fire Program

[Exhibit 1-1-1: GUIDE FOR INSTRUMENT SELECTION](#)

1.2 [FIREBASE](#) - Revised 2/14/01

1.3 [FIRE PREVENTION/EDUCATION](#) - Revised 3/17/00

1.3.1 [PREVENTION ANALYSIS](#)

Determination of Risks

Determination of Hazards

Determination of Values

Assessment of Priorities

1.3.2 [PREVENTION PLAN](#)

Overview

Outreach in Prevention

Plan Implementation

[Fire Prevention Plan Format](#)

1.3.3 [EMPHASIS PROGRAMS](#)

Cooperative Forest Fire Prevention (CFFP)/Smokey Bear Program

Wildland-Urban

Volunteers In Wildfire Prevention

1.3.4 [PREVENTION TRAINING, POSITIONS AND FUNDING](#)

1.3.5 [INTERAGENCY COOPERATION](#)

[Exhibit 1-3-1: WILDLAND FIRE PREVENTION PLAN FORMAT](#)

Rehabilitation

- 1.4 **WILDLAND FIRE MANAGEMENT PLANNING** - Revised 8/7/02
 - 1.4.1 **FIRE MANAGEMENT PLANNING**
 - Regional Plans
 - Refuge Plans
 - Other Regulatory Compliance
 - Planning Review
 - 1.4.2 **FIRE MANAGEMENT PLAN**
 - Introduction
 - Prescriptive Criteria
 - Accepted Outline for Fire Management Plan
 - Other Operational Plans
 - 1.4.3 **REGIONAL FIRE DISPATCH PLAN**
 - [Exhibit 1-4-1: FIRE MANAGEMENT PLAN OUTLINE](#)
 - [Exhibit 1-4-2: PRESCRIBED FIRE PLAN FORMAT](#)
 - [Exhibit 1-4-3: COOT CREEK NWR SAMPLE DISPATCH PLAN](#)
 - [Exhibit 1-4-4: COOT CREEK NWR SAMPLE STEP-UP PLAN](#)
 - [Exhibit 1-4-5: PRE-ATTACK PLAN CHECKLIST](#)
- 1.5 **TRAINING, QUALIFICATIONS AND CERTIFICATION** - Revised 12/5/00
 - 1.5.1 **PERSONNEL**
 - Introduction
 - Program Administration
 - Fire Management Curriculum
 - Training Development
 - Training Nomination Process
 - Fire Management Instructor Program
 - Training Certification Process
 - Qualification and Certification
 - Minimum Service Standards
 - Service Specific Wildland and Prescribed Fire Standards and Criteria
 - Wildland Fire Standards
 - Prescribed Fire Standards
 - Fitness Standards and Requirements
 - Physical Examinations for Fire Management Positions
 - SF-78 and Supplement Information
 - Agency Determined Skill Levels
 - 1.5.2 **SAFETY OPERATIONS**
 - Responsibilities
 - Training and Qualifications
 - Field Operations
 - Aviation
 - Vehicles
 - 1.5.3 **EQUIPMENT**
 - Personal Protective Equipment
 - Use
 - 1.5.4 **STRUCTURAL FIREFIGHTING**
 - [Exhibit 1-5-1: WORK CAPACITY TEST RECORD](#)
 - [Exhibit 1-5-2: SF-78 AND SUPPLEMENT INFORMATION](#)
- 1.6 **FINANCIAL MANAGEMENT** - Revised 7/10/02
 - 1.6.1 **INTRODUCTION**
 - 1.6.2 **FINANCIAL MANAGEMENT**
 - Fire Accounts
 - Base Eight Pay for Fire Management Activities
 - Fire Account Review Procedures
 - Accounting
 - Wildland Fire Preparedness
 - [Subactivity: 9251 - Preparedness](#)
 - Wildland Fire Operations

[Subactivity: 9261 - Suppression Operations](#)

[Subactivity: 9262 - Emergency Rehabilitation](#)

[Subactivity: 9263 - Hazardous Fuel Reduction Operations](#)

[Subactivity: 9264 - Wildland Urban Interface Fuel Reduction Operations](#)

[Subactivity: 9265 - Rural Fire Assistance](#)

Incident Numbers

Cost Coding and Incident Numbers

[Exhibit 1-6-1: GUIDELINES FOR MANAGEMENT OF 9263 FUNDING AUTHORITY](#)

1.7 [**AUTOMATED INFORMATION SYSTEMS**](#) - Revised 3/17/00

1.7.1 [INTRODUCTION](#)

1.7.2 [FISH AND WILDLIFE SERVICE FIRE MANAGEMENT INFORMATION SYSTEM](#)

1.7.3 [WIMS](#)

1.7.4 [FIRE EFFECTS INFORMATION SYSTEM](#)

1.8 [**PROGRAM RECORDS AND REPORTS**](#) - Revised 3/17/00

1.8.1 [PERMANENT REFUGE RECORDS](#)

1.8.2 [SITUATION REPORTS](#)

1.8.3 [FIRE WEATHER RECORDS](#)

1.8.4 [FIRE REPORT RECORDS](#)

This page was last modified 01/07/03

[|Disclaimer|](#) | [Privacy](#) | [Copyright](#) | [USFWS Main Page](#) | [Webmaster](#)



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Policy\]](#) [\[Policy Application\]](#) [\[Responsibility\]](#) [\[Interagency Coord.\]](#)



1.1 PROGRAM MANAGEMENT

1.1.1 POLICY

Service fire management policy is based on the Departmental Manual ([620 DM 1](#)) and the [2001 Federal Wildland Fire Policy](#).

- **Firefighter and public safety is the first priority.** All Fire Management Plans and activities must reflect this commitment. With the possible exception of instances where the life of another is threatened, no Service employee, contractor, or cooperator will be purposely exposed to life-threatening conditions or situations (See [241 FW 7](#)).
- Only trained and qualified people will be assigned to fire management duties. Fire Management personnel will meet training and qualification standards established or adopted by the Service for the position they occupy. Agency Administrators will meet training standards established or adopted by the Service for the position they occupy.
- Employees who are trained and certified will participate in the wildland fire management program as the situation demands. Non-certified employees with operational, administrative, or other skills will support the wildland fire management program as needed. Agency Administrators will be responsible, be held accountable, and make employees available to participate in the wildland fire management program.
- Fire management planning, preparedness, wildland and prescribed fire operations, monitoring, and research will be conducted on an interagency basis with the involvement of all partners when appropriate.
- Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans must be consistent with firefighter and public safety, values to be protected, and land, natural, and cultural resource management plans, and must address public health issues. Fire Management Plans must also address all potential wildland fire occurrences and may include the full range of appropriate management responses. Fire Management Plans must be coordinated, reviewed, and approved by the responsible agency administrator, to ensure consistency with approved land management plans.
- Fire, as an ecological process, will be integrated into resource management plans and activities on a landscape scale, across jurisdictional boundaries, and will be based upon best available science. All use of fire for natural and cultural resource management requires an approved plan which contains a formal prescription.
- Wildland fire will be used to meet identified resource management objectives when appropriate.
- The Service will employ prescribed fire whenever it is an appropriate tool for managing Service resources and to protect against unwanted wildland fire whenever it threatens human life, property and natural/cultural resources. Once people have been committed to an incident, these human resources become the highest value to be protected. If it becomes necessary to prioritize between property and natural/cultural resources, this is done based on relative values to be protected, commensurate with fire management costs.
- Regions will ensure their capability to provide safe, cost-effective fire management programs in support of land, natural, and cultural resource management plans through appropriate planning, staffing, training, and equipment.
- Management actions taken on wildland fires must consider firefighter and public safety, be cost effective, consider benefits and values to be protected, and be consistent with natural and cultural resource objectives.
- Refuges will work with their local cooperators and the public to prevent unauthorized ignition of wildland fires on Service lands.
- The Bureau of Land Management, Alaska Fire Service, under the provisions of the Departmental Manual (620 DM 2) is delegated authority to provide safe, cost-effective emergency wildland fire suppression services in support of land, natural and cultural resource management plans on Department of the Interior administered land in Alaska. The U.S. Fish and Wildlife Service retains management responsibility and accountability for those suppression service activities occurring on lands under Service jurisdiction.
- Structural firefighting is not the functional responsibility of the Service. Service assistance in structure protection should only be performed on an emergency basis to save lives. (See Fire Management Handbook, 1.5.4)
- Fire management policies and procedures for safety, training and equipment are mandatory. See [241 FW 7](#) (Safety Operations - Firefighting), [232 FW 6](#) (Firefighting Training), and [241 FW 3](#) (Personal Protective Equipment).

1.1.2 POLICY APPLICATION

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[Policy](#)

[Policy Application](#)

[Responsibility](#)

[Interagency Coord.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

Because the current policy presents some significant departures from previous fire management policies and procedures, a great deal of uncertainty and misunderstanding is associated with it. The following sections provide clarification of the policy, required background documentation, and interpretations and implications.

2001 Federal Wildland Fire Policy - Framework and Flowchart

To reduce misinformation and provide correct and consistent direction, the 2001 Federal Wildland Fire Policy developed and approved an "umbrella" [flowchart](#) which illustrates the broad framework encompassing policy implementation. This flowchart has become the cornerstone for policy description, illustration, and development of implementation processes. The flowchart represents the interagency-approved diagram illustrating the broad framework within which the new policy will be implemented.

This flowchart portrays all fires as either wildland or prescribed fires. Wildland fire can follow one of three pathways, depending upon the level of land management planning completed, resource values affected, or fire cause. Refuges without a completed and approved Fire Management Plan have severely limited management options available. In these situations, refuges may only implement initial attack suppression strategies.

When the Fire Management Plan has been completed and approved (meets NEPA compliance) and wildland fires are from natural ignition sources, the full extent of management options is available, depending upon resource management objectives present in the Fire Management Plan. The Fire Management Plan must also contain specific prescriptive criteria and management actions for managing wildland fire to achieve resource management objectives. These actions could range from monitoring with minimal on-the-ground actions to intense suppressions actions on all or portions of the fire perimeter. The appropriate management response is developed from analysis of the local situation, values-to-be-protected, management objectives, external concerns, and refuge objectives.

When the Fire Management Plan has been completed and approved (meets NEPA compliance), prescribed fire, differs very little from how it has been managed under previous policy. Management planning must clearly specify the need and objectives for prescribed fire. Operational Prescribed Fire Plans must be developed and approved before a fire can be ignited. When conditions described in the Prescribed Fire Plan occur and necessary resources are available to implement the prescribed actions, the fire is ignited and the plan is implemented.

Human-caused fires will be managed through a suppression response both in the presence and absence of an approved Fire Management Plan. Management responses or actions are not developed to gain resource benefits. There are no options other than cost-effective suppression actions.

For either situation, wildland or prescribed fire, if the desired objectives cannot be met, or the plan cannot be implemented, a new strategy must be selected through the Wildland Fire Situation Analysis (WFSA) process and a new plan developed.

Wildland Fire - No Approved Fire Management Plan

If an approved Fire Management Plan (meeting NEPA compliance) is not present for a particular refuge, then the only available option is suppression of the wildland fire and appropriate action will be taken immediately. Common sense must be used in suppression actions considering firefighter and public safety, values to be protected, least cost, and resource damage caused by the suppression action. If the initial attack is unsuccessful, a WFSA will be prepared to determine the next set of management responses.

Key Points:

- A Fire Management Plan has not been completed or is not approved. When a Fire Management Plan has been approved, this pathway will no longer be applicable.
- This scenario does not represent the previous "wildfire pathway." It's purpose is to show that the full range of management responses is not available if the Fire Management Plan is not approved.
- Management responses or actions are not developed to gain resource benefits because there is not an approved Fire Management Plan. There are no options other than suppression.
- Suppression actions are taken at all times while keeping firefighter and public safety as the number one priority consistent with values to be protected, and keeping costs commensurate with resource values.

Wildland Fire - Approved Fire Management Plan

This is the most complex of scenarios but offers full advantage of the fire policy. It allows resource benefits to be achieved from a wildland fire. It must be noted that having an approved Fire Management Plan does not mandate that a particular refuge will choose to make use of the full range of management responses. Refuges will identify strategies to accomplish their needs in the Fire Management Plan. These strategies will include the best options to safely, economically, and effectively accomplish stated objectives. Refuges will designate their specific management

responses, which may include not managing wildland fires to achieve resource objectives.

The full range of management responses runs the spectrum from aggressive suppression of the fire to managing fires to achieve resource objectives. Human caused fires will occur in this pathway and Fire Management Plans will clearly state that the only appropriate management response will result in a suppression action.

Key Points:

- A Fire Management Plan has been completed and approved.
- NEPA compliance must be completed before taking full advantage of the fire policy and full range of management options to meet resource objectives.
- This is not a replacement pathway for "prescribed natural fire." This pathway will actually lead to suppression of over 90 percent of all wildland fires occurring in areas covered by completed Fire Management Plans. In some cases, Fire Management Plans will program suppression as the only acceptable response.
- Management actions applied to a fire can consist of suppression, ranging from aggressive initial attack to a combination of strategies to achieve confinement, or can exclusively deal with managing fire to achieve resource objectives. There may be periodic fire occurrences that warrant a combination of strategies that result in suppressing a portion of an unwanted wildland fire as well as confining the fire within the remaining fire perimeter to achieve resource benefits. These situations will be closely scrutinized. Clear fire management objectives must be provided in the Fire Management Plan for successful implementation. Management actions for specific units do not have to include all potential responses, but can consist of only a part of all possibilities. All human-caused fires will be suppressed.
- Any wildland fire can be extinguished, and any naturally ignited fire occurring in an area designated for fire use, can, if it meets specific decision criteria, be managed to achieve resource objectives. Every management response to wildland fire must be identified in the Fire Management Plan, be based on objectives, and have sound rationale that clearly demonstrates the validity of the response.

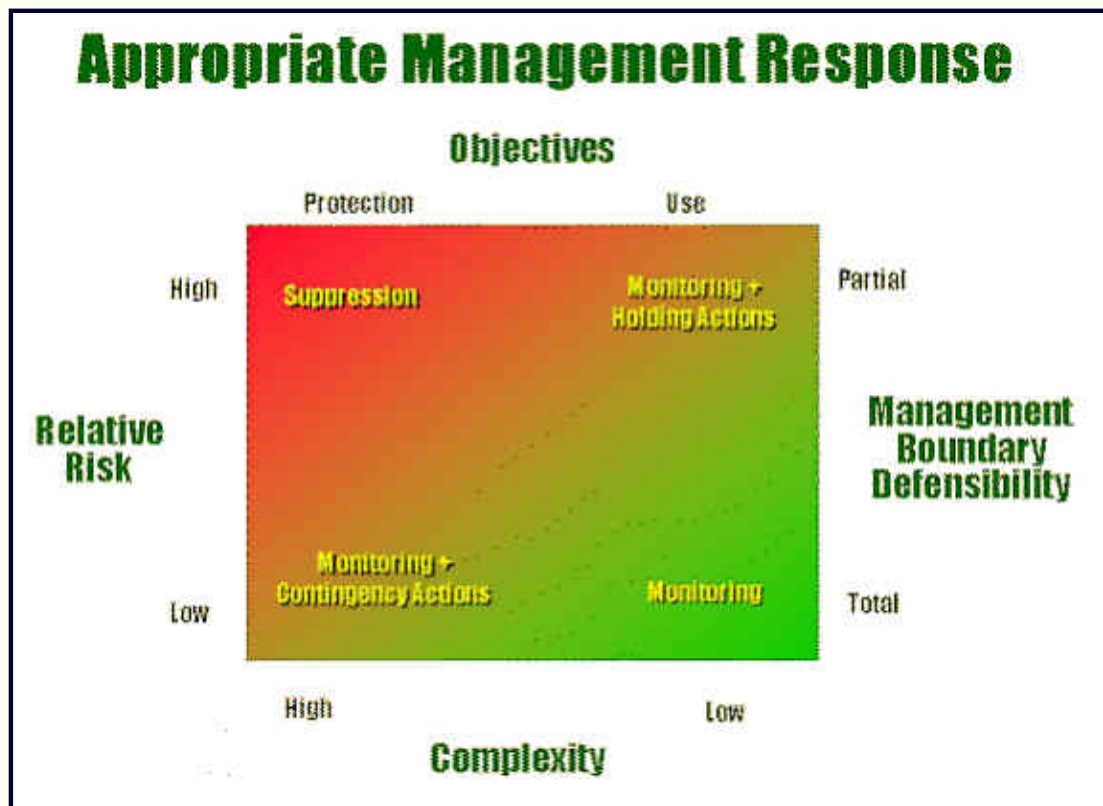
Interpretation of the Appropriate Management Response

The concept of appropriate management response is integral to the current policy. Management responses are programmed to accept resource management needs and constraints, reflect a commitment to safety, be cost-effective, and accomplish desired objectives while maintaining the versatility to vary in intensity as conditions change.

The appropriate management response is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows refuge managers to utilize a full range of responses. It does not lock tactical options to fire type designations. As conditions change, the particular response can change to still accomplish the same objectives.

It is important to note that the appropriate management response is not a replacement term for prescribed natural fire, or the suppression strategies of control, contain, confine, limited, or modified, but is a concept that offers refuge managers a full spectrum of responses. It is based on objectives, environmental and fuel conditions, constraints, safety, and ability to accomplish objectives. It includes wildland fire suppression at all levels, including aggressive initial attack. Use of this concept dispels the interpretation or belief that there is only one way to respond to each set of circumstances.

The purpose of giving refuge managers the ability to select the appropriate management response on every wildland fire is to provide the greatest flexibility possible and to promote opportunities to achieve greater balance in the program. To clarify the full range of options available under the appropriate management response, four variables are used to illustrate development and estimation of an appropriate management response.



For those situations indicating a suppression-oriented response, a range of responses dealing with only suppression actions is available. The range of suppression-oriented appropriate management responses can vary.

Prescribed Fire

Prescribed fire includes all fires ignited by management actions to meet specific objectives. Prescribed fire is a well accepted and established practice utilized by Federal, State, Tribal, and private land management agencies. In order to effectively use prescribed fire, a Fire Management Plan must be completed and approved, and a comprehensive, approved Prescribed Fire Plan must exist.

The Comprehensive Conservation and Habitat Management Plan specifies the overall need for and limitations of the application of fire. The Fire Management and Prescribed Fire Plan describes why the fire is needed, what the fire will accomplish, when conditions will permit achievement of desired effects, how specific fire application will occur, and how the progress and results will be monitored and evaluated.

If land and resource management plans identify needs that can be accomplished by fire use, Fire Management Plans will carry this need forward and identify locations and objectives. Site specific operational plans, such as Prescribed Fire Plans, will be prepared, approved, and implemented.

Prescribed fire plans may not be able to be fully implemented due to circumstances such as exceeding the prescriptive criteria, adverse fire behavior due to unexpected weather and fire behavior activity, or external considerations that direct change to other management alternatives. In these cases, a new strategic alternative will be selected and implemented. The WFSA is the tool to analyze alternatives, identify the appropriate management action, and specify necessary actions.

The practice of prescribed burning has historically been applied on a small scale to accomplish site-specific, maintenance objectives. This practice has primarily been confined to single land ownerships or jurisdictions. Wildland fire activity during recent years has increased the awareness of the need to reduce hazardous fuel accumulations. Immediate treatment to reduce conditions favorable to large-scale, high-intensity fires and to maintain ecosystem health are needed. Fuel treatment, as well as restoration of natural fire frequencies and function, can be achieved through the application of prescribed fire. This application can no longer be limited to small scale operations. Fire restoration actions need to include much larger scale prescribed fire applications, such as landscape-scale applications that may involve multiple jurisdictions. Strategic landscape-scale fuel management and fire use planning must be capable of supporting ecosystem maintenance goals through the integration of a variety of treatment methods. Available treatment methods include fire, mechanical, chemical, biological, and manual methods to effect reductions in both naturally occurring fuels and hazardous fuel accumulations resulting from resource management, fire exclusion, and land-use activities.

Selecting a New Strategy - Wildland Fire Situation Analysis

The [Wildland Fire Situation Analysis \(WFSA\)](#) is a decision making process in which the Agency Administrator or representative describes the situation, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, establishes objectives and constraints for management of the fire, selects the preferred alternative, and documents the decision. The format and level of detail required is dependent on the specific fire and its complexity. The key is to document the decision.

Use of the WFSA is integral to successful management of both wildland and prescribed fires. It serves as a contingency to undesirable outcomes by providing a mechanism to quickly and thoroughly analyze now strategic alternatives for any type of fire management activity.

The WFSA document contains sections to the document the process and decision.

Components of a WFSA include:

- WFSA initiation section (specific fire information and date/time initiated)
- WFSA completion/final review (information concerning when the selected alternative was achieved or when a new WFSA was prepared. This provides closure to this particular WFSA. Also includes Agency Administrator signature).
- Wildland Fire Situation Analysis (WFSA Information Page)
- Objectives and Constraints
- Alternatives
- Evaluation of Alternatives
- Analysis Summary
- Decision
- Daily Review
- Guide for Assessing Fire Complexity (Evaluates fire conditions and provides recommendations concerning management level of fire i.e., Type 1, Type 2, Type 3).

The WFSA is vital to continued operations when fire spread and behavior exceed suppression efforts, when management capability is inadequate to accomplish wildland fire use objectives, or when prescribed fire plans are no longer adequate to guide full implementation. The WFSA document can be used to compare alternatives reflecting the full range of appropriate management responses and can assess alternatives for realizing protection and/or resource benefits opportunities.

The document used for this purpose under the previous policy was the Escaped Fire Situation Analysis (EFSA) which differed in use from the WFSA in that it analyzed only suppression alternatives. The WFSA can, in selected situations, be used to analyze alternatives that will accomplish resource benefits in combination with protection objectives. The following table provides guidelines to determine how the WFSA may be used for specific circumstances. But, it's use is not limited to these circumstances only as other situations may develop that require a different focus.

Basic Situational Guidelines for WFSA Preparation

Situation	WFSA Considerations	
	Protection	Protection + Resource Objectives
Human-caused fire = unwanted fire	X	
Fire exceeds initial attack = unwanted fire	X	
Fire exceeds extended suppression action in suppression unit = unwanted fire	X	
Fire exceeds Wildland Fire Implementation Plan in fire use unit, completely breaches MMA = unwanted fire	X	

Fire exceeds Prescribed Fire Plan = unwanted fire	X	
Fire exceeds Wildland Fire Implementation Plan in fire use unit, partially breaches MMA = original MMA still has potential benefits while new fire outside MMA is unwanted		X
Fire exceeds suppression action in suppression unit and moves into fire use unit = fire in suppression unit is unwanted while fire in fire use unit has potential benefits		X

Understanding the Wildland Fire Management Policy

Interpretation and subsequent understanding of this policy and implications to management can be confusing. Comparison to previous fire management policies does not necessarily offer similarities and direct replacement terms and defined actions. Looking at the flexibility and range of opportunities presented by the new policy greatly facilitates its interpretation. Complete understanding of these opportunities and implementation mechanisms is prerequisite to efficient implementation.

Common misconceptions have developed about the new policy and to understand what it can accomplish, we must realize that this policy:

- Is not a less safe way of managing wildland fires.

The new policy is formulated on a solid basis incorporating safety, and this commitment is continually reinforced. The Fish and Wildlife Service will develop and implement management procedures and actions that accomplish objectives while always remaining consistent with a firm commitment to safety. 2001 Federal Wildland Fire Policy [Guiding Principles](#), identified as fundamental to the success of the policy implementation, describe the commitment to safety in the very first principle.

One of the key points stated in the 2001 Federal Wildland Fire Policy recommendation report is, "Protection of human life is reaffirmed as the first priority in wildland fire management. Property and natural/cultural resources jointly become the second priority, with protection decisions based on values to be protected and other considerations." Actions to be taken by Federal agencies, as stated in the report, include, "Once people are committed to an incident, those resources become the highest value to be protected and receive the highest management considerations."

- Is not a significant change in what we do.

The wildland fire management program strives to accomplish objectives designed to maintain, enhance, protect, and preserve natural and cultural resources. Fire management programs will maintain the capability to provide safe, ecologically sound, and economically efficient actions in support of land and resource management plans through planning, staffing, training, and equipment readiness.

- Is not a wholesale shift to "let burn" actions.

Service fire management programs have never included, "let burn" activities. The implication that fires do not receive appropriate levels of management, scrutiny, and attention is not correct. In fact, wildland and prescribed fires have and will continue to receive significant focus during planning, implementation, and evaluation management phases. All wildland fire management decisions and operational activities will be given the attention and priority to ensure that proper management will occur.

A wholesale shift to one management strategy over another is neither desirable nor realistic, inconsistent with policy goals, and will not occur. The aggregate strategies available to implement the fire management program will increase in application to achieve a better balance of protection and land and resource management objectives.

The Service will work with other agencies and with other affected groups and individuals to prevent unauthorized ignition of wildland fires. Unwanted wildland fires will be suppressed at minimum cost, considering firefighter and public safety, benefits, and values-to-be-protected, consistent with resource objectives.

The Service will utilize the full spectrum of fire management actions - from prompt suppression of unwanted fires to managing naturally-ignited fires to realize and accomplish specific resource management objectives. The vast majority of wildland fires will continue to receive a suppression-oriented response. Suppression capabilities will continue to expand

and grow in sophistication and capability to meet increasing demands such as the rapid expansion of wildland/urban interfaces.

- Is not a less efficient way of doing business.

The new policy promotes application of fire management actions along a "sliding scale" with ranges of minimal on-the-ground actions to prompt, aggressive actions to fully extinguish the fire. Use of this spectrum of responses allows the Service more flexibility to design responses closely allied with objectives and fuel, weather, and topographic conditions. Responses used to be driven by fire type as well as other considerations. But under the current policy, responses will be appropriate for individual conditions and objectives associated with that ignition, and not related to a fire type or classification. This will permit the Service to achieve effectiveness and efficiency in operations.

What the new policy actually represents is:

- A more cohesive way of approaching wildland fire management.

Management actions on wildland fires will no longer be driven by fire type designation. Fires will no longer be extinguished under a default response but will be suppressed for specific reasons. Fires that are managed for resource objectives will have specific rationale for such management identified in the Fire Management Plan.

- A foundation to facilitate more efficient operations.

Classification of all fires into a single category of wildland fires will enable refuge managers to respond to each and every fire in a manner appropriate for the objectives, constraints, and conditions associated with that fire. Refuge managers will not be forced to adopt a strategy due to fire classification. Greater attention to ecological concerns will occur and each fire will have a greater probability of accomplishing desired objectives.

- A program of action that promotes concurrent use of available management strategies.

Through the appropriate management response, managers can respond to different fires in different manners, using different strategies to accomplish different objectives. Nothing precludes this from happening concurrently. In fact, the most efficient program management will make simultaneous use of fire management strategies.

2001 Federal Wildland Fire Policy recommendation goals support the concurrent utilization of available management strategies by stating, for protection capabilities, "Federal Agencies will maintain sufficient fire suppression and support capability." They further state for reintroduction of fire, "Based upon sound scientific information and land, resource, and fire management objectives, wildland fire is used to restore and maintain healthy ecosystems and to minimize undesirable fire effects. Fire management practices are consistent for areas with similar management objectives, regardless of jurisdiction."

- A program of action that does not automatically place priority on one strategy over another with analysis of specific information.

Wildland fires managed for resource benefits will not be automatically categorized as having a lower priority than fires receiving a suppression response. However, all wildland fires must compete for resources on the basis of objectives, values-to-be-protected, safety, and other specific considerations. During periods of resource shortages, those fires determined to be in greater need will receive priority for resource allocation.

Policy review action items for values to be protected and preparedness planning state, "Federal agencies will define values to be protected, working in cooperation with State, local, and Tribal governments; permittees; and public users. Criteria will include environmental, commodity, social, economic, political, public-health, and other values." As part of the standardization goals, the report states that agencies will use compatible values-to-be-protected methodologies. Common priority setting standards to facilitate allocation of scarce resources will be developed.

- A common planning process for all agencies, resulting in one plan.

The Fire Policy Review Recommendation for planning states, "Fire management goals and objectives, including the reintroduction of fire, are incorporated into land management planning to restore and maintain sustainable ecosystems. Planning is a collaborative effort, with all interested partners working together to develop and implement management objectives that cross jurisdictional boundaries." Actions stated in the Policy Review include, "the use, by Federal Agencies, of a compatible fire management planning system that recognizes both fire use and fire protection as inherent parts of natural resource management; this system will ensure adequate fire suppression capabilities and support fire reintroduction efforts," and that Federal agencies will, "continue on-going efforts to jointly develop compatible, ecosystem-based, multiple-scale, interagency land management plans that involve all interested parties and facilitate adaptive

management."

- A process based on uniform budget and fiscal procedures.

Agency standardization and development of common procedures will reduce administrative barriers. Action items to achieve this include:

- develop consistent language to be included in budget appropriations, enabling the full spectrum of fire management actions on wildland fires,
- seek authority to eliminate internal barriers to the transfer and use of funds for prescribed fire on non-Federal lands and among Federal agencies,
- seek authority or provide administrative direction to eliminate barriers to carrying over from one year to the next all funds designated for prescribed fire,
- work with the Office of Personnel Management to acquire authority for hazard pay to compensate employees exposed to hazards while engaged in prescribed burning activities,
- jointly develop simple, consistent hiring and contracting procedures for prescribed fire activities,
- jointly develop programs to plan, fund, and implement an expanded program of prescribed fire in fire-dependent ecosystems.

1.1.3 RESPONSIBILITY

The Secretary has given responsibility for the operation of the fire management program on Service lands to the Director of the U.S. Fish and Wildlife Service (620 DM 1).

A. Director. The Director has overall responsibility for the Service wildland fire management program. The Director will ensure that all Regional fire management activities are formally evaluated.

B. Chief, National Wildlife Refuge System. The National Wildlife Refuge System under the Chief provides leadership for the wildland fire management program. The National Wildlife Refuge System also formally evaluates all Regional wildland fire management activities at least every 5 years. The Assistant Director is authorized to promulgate and approve the Fire Management Handbook and other fire related handbooks as needed to provide guidance.

C. Service Fire Management Coordinator (SFMC). The Service Fire Management Coordinator is the Chief of the Fire Management Branch in the National Wildlife Refuge System and is the Service representative at the National Interagency Fire Center (NIFC). The Fire Management Branch is responsible for providing technical direction and coordination of fire management planning, policy development, and procedures Servicewide. The SFMC, through this manual, is delegated authority by the Director to represent the Service on the National Multi-Agency Coordinating Group (MAC Group). The SFMC is responsible for implementing the decisions of the MAC Group as they affect U.S. Fish and Wildlife Service areas. The decisions of the MAC Group include the prioritizing of incidents nationally and the allocation or reallocation of firefighting resources to meet national priorities.

D. Regional Director. The Regional Director is responsible for the wildland fire management program in the Region and for designating a qualified Regional Fire Management Coordinator. The Regional Director, through the Regional Fire Management Coordinator, will provide wildland fire management program support to Service lands located within their geographic Region. The Regional Director will identify and clarify the roles and responsibilities of other Regional Office staff who might provide oversight to the Fire Management Program.

E. Regional Fire Management Coordinator (RFMC). The RFMC provides coordination, training, planning, evaluation, and technical guidance for the Region and is available to provide assistance for intra-agency and interagency wildland fire management needs. The Regional Fire Management Coordinator will meet qualification requirements established by the Service for the position. The RFMC, through written delegation by the Regional Director, is delegated authority to represent the Region on the Geographic Multi-Agency Coordinating Group (MAC Group). The RFMC is responsible for implementing the decisions of the MAC Group as they affect U.S. Fish and Wildlife Service areas. The decisions of the MAC Group include the prioritizing of incidents and the allocation or reallocation of firefighting resources to meet wildland fire management priorities.

F. Project Leader. The Project Leader is responsible for planning and implementing an effective wildland fire management program on Service lands under his/her jurisdiction. The Project Leader, in conjunction with fire management specialists, determines the level of fire management effort required to meet wildland fire management objectives of each unit. The Project Leader will ensure that an approved Fire Management Plan is prepared for Service lands under their jurisdiction. This would include appropriate consultation with staff specialists such as the Regional Historic Preservation Officer or Service Archeologist if appropriate. If the fire management program warrants, the Project Leader will establish a position to function as the Fire Management Officer for the field office (see below). Otherwise, the Project Leader will assign the fire management responsibilities to a staff member as a collateral duty. A staff member, assigned fire management responsibilities as a collateral duty, will meet fire management qualification requirements established by the Service. Project Leaders are to ensure that personnel hired in dedicated, fire funded positions are made available for dispatch to off-refuge/interagency wildland and prescribed fire management operations. Project

Leaders will meet fire management training requirements established by the Service for their position.

G. Fire Management Officer (FMO). Fire Management Officers will be assigned where an individual refuge wildland fire management program requires wildland fire management expertise. An FMO may be assigned to provide wildland fire management support to a group of refuges (zone or district) when individually each refuge does not warrant a full time FMO. These are dedicated, fire funded positions, and as such are a Regional and national resource. The FMO may be called upon to assist in both intra-agency and interagency wildland fire management needs. The Fire Management Officer will meet qualification standards established or adopted by the Service for the position.

1.1.4 INTERAGENCY COORDINATION AND COOPERATION

Interagency cooperation is vital to the full realization of Fish and Wildlife Service fire management program objectives. The ability of a single agency to implement a fire management program of any complexity is limited without coordination with and assistance from other organizations. Interagency cooperation and coordination of shared resources and common activities is imperative at all organizational levels. A clear understanding of the roles each agency has at each organizational level is necessary to maximize the benefits of interagency coordination and assure the fulfillment of agency responsibilities. The following agreements and organizations provide program direction, coordination and/or support to the Wildland Fire program.

Interagency Assistance

The authority for interagency agreements is found in "Interagency Agreement for Fire Management Between the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Fish and Wildlife Service of the United States Department of the Interior and the Forest Service of the United States Department of Agriculture" (1997).

- To provide a basis for cooperation among the agencies on all aspects of wildland fire management and as authorized in non-fire emergencies.
- To facilitate the exchange of personnel, equipment (including aircraft), supplies, and funds among the agencies.

The authority for rendering emergency fire or rescue assistance outside of the Fish and Wildlife is the Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66), and the Departmental Manual (620 DM).

Coordination

National Level Coordination:

- The Wildland Fire Leadership Council (WFLC) is comprised of all the Interior Wildland Fire Bureau Directors. The purpose of the council is to provide Wildland Fire Management program oversight and coordination between bureaus.
- The Office of Wildland Fire Coordination (OWFC) is comprised of representatives from the Department of the Interior and Department of Agriculture Wildland Fire Management Programs. This office provides coordination between the two Departments in matters related to Wildland Fire Management and represents the program in congressional affairs.
- The National Wildfire Coordinating Group (NWCG) was formed on March 18, 1976, by cooperative agreement between the Secretaries of Agriculture and Interior. The purpose of NWCG is to improve the effectiveness and efficiency of all Federal and State wildland fire management agencies in the United States. The group accomplishes this goal by coordinating the programs of the participating agencies in order to provide a means for working together constructively. NWCG provides a formalized system through which agreement may be reached on substantive issues in fire management. Agreed-upon policies, standards, and procedures are then implemented directly by each agency. The Service Fire Management Coordinator (SFMC) is the Fish and Wildlife Service representative to NWCG.
- The Federal Fire and Aviation Leadership Council (FFALC) guides and coordinates development of wildland fire management bureaus in the Department of the Interior and Department of Agriculture. The Service Fire Management Coordinator (SFMC) is the Fish and Wildlife Service representative to FFALC.
- The Federal Fire and Aviation Safety Team (FFAST). This team is comprised of fire and aviation safety representatives from the federal wildland fire agencies and the Office of Aircraft Services (OAS). The Federal Fire and Aviation Leadership Council charter FFAST. The team functions as a single federal wildland fire and aviation safety staff to oversee and monitor national fire and aviation safety practices, and make recommendations to improve safety and prevent accidents.
- The Interior Fire Coordination Committee (IFCC) guides and coordinates development of wildland fire policy among the four wildland management bureaus in the Department of the Interior. IFCC provides leadership and advice for the development, coordination and maintenance of wildland fire management capabilities, and for the standardization of procedures, methods and practices within the Department. Fish and Wildlife Service units must comply with these DOI standards. The Service Fire Management Coordinator (SFMC) is the Fish and Wildlife Service representative on the IFCC.

- The National Interagency Fire Center (NIFC) is located at Boise, Idaho, and is a complex of Federal bureaus, all of which have wildland fire responsibilities. The Bureau of Land Management serves as host bureau for the National Park Service, Bureau of Indian Affairs, Office of Aircraft Services, and the Fish and Wildlife Service. The U. S. Forest Service (Department of Agriculture) and the National Weather Service (Department of Commerce) are also located at NIFC. These bureaus and agencies form an interagency partnership aimed at providing efficiency and economy in the field of fire management to include preparedness, suppression and fire use.
- Regional Level Coordination: Regional Offices oversee and facilitate implementation of interagency standards and policies developed at the national level. RFMCs facilitate and coordinate participation in national training, overhead teams, and task groups. Through coordination with counterparts from other agencies, RFMCs ensure that the Fish and Wildlife Service contributes appropriately to Regional interagency training and overhead needs.

Refuge Level Coordination: The refuge Fire Management Plan and any supporting documents identify the necessary local sources, types, and levels of interagency coordination. They also delineate the process whereby compliance with national and Regional policies and standards will be achieved. Refuge managers and their staffs maintain and execute the Fire Management Plan and cooperative interagency relationships.

Interagency Mobilization

National Mobilization. Mobilization tests interagency cooperation and demonstrates the value of interagency coordination. The National Interagency Mobilization Guide, which is revised annually, clearly describes interagency mobilization and dispatch procedures at all levels. Its directives will be followed by all refuges and Regions, without deviation.

Regional Mobilization. Regional dispatch normally occurs through geographical coordination centers to meet fire mobilization requirements. These centers review simultaneously occurring incidents and dispatch interagency resources on a priority basis.

Local Mobilization. Refuges should become familiar with the geographical dispatch center through which their personnel are dispatched and resources are requested. A refuge may be called upon to provide resources or to receive requested resources based upon priorities established by a Multi-Agency Coordinating Group (MAC).

Multi Agency Coordinating Group (MAC Group)

MAC Groups should be activated at the local and geographic levels whenever wildland fire activities are affecting more than one agency or there is competition for incident resources. There may also be a need for Geographic Areas to activate MAC when the National Fire Preparedness Level is at V, enabling Area response to requests/direction from the National MAC.

Responsibilities of MAC Groups at all levels:

- Determine priorities.
- Allocate/reallocate resources
- Develop/recommend contingency action plans.
- Issue coordinated situation assessments.

Agreements and Contracts

Refuges should develop agreements or contract with local agencies and fire departments to meet mutual needs. Concerns of area-wide scope should be addressed through Regional agreements. [Exhibit 1-1-1](#) provides a guide to the appropriate agreement or contract.

Drafts of all agreements and contracts for fire protection shall be submitted to the Regional Office and, where appropriate, field solicitors for review prior to implementation. The authority to enter into interagency agreements is extensive and found in the Service Manual and the Departmental Manual, 620 DM.

Multi-agency fire activities may be in one of the three following categories:

Mutual Aid Agreements. The national agreement, which serves as an umbrella for interagency assistance among Federal agencies, is the "Interagency Agreement for Fire Management Between the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Fish and Wildlife Service of the United States Department of the Interior and the Forest Service of the United States Department of Agriculture" (1997). This agreement and other national agreements provide a framework for, and grant substantial latitude in the development of Regional and local agreements and operating plans.

Besides the national agreement, Regional, State and local cooperative agreements can be developed for mutual-aid assistance. These agreements can be essential and should be a part of the fire management program in each refuge.

Agreements should lead to positive interaction among the participating parties by providing for areas of interaction other than crisis operations and by addressing all potential areas of cooperation and coordination in fire management programs. In addition to the Fish and Wildlife Service contracting requirements in 23 AM 1, they should specifically address the following, as appropriate:

- Cooperation in prevention, preparedness, wildland, and prescribed fire management operations.
- Coordination in development and implementation of fire management plans, including fire management strategies, tactics, and methods.
- Identification of parties responsible for implementing various aspects of the agreement.
- Command Structure – In order to facilitate a cooperative effort on a wildfire incident, the Incident Command System (ICS) shall be used. If the incident involves multiple jurisdictions, a unified command should be implemented. Command of the incident may also be delegated from the agency with jurisdiction to the cooperating agency, by mutual agreement, as necessary.
- Communications – At a minimum, there will be one common designated radio frequency used by Command and/or the Officers in Charge of the requesting and responding parties. It is understood that the cooperating parties agree to the use of their assigned radio frequencies between parties. However, the assigned frequencies will only be used when the parties are engaged in common fire suppression activities or other emergency incidents.
- Liabilities/Waivers – Each party waives all claims against every other party for compensation for any loss, damage, personal injury, or death occurring as a consequence of the performance of this agreement unless gross negligence on any part of any party is determined.
- Distance/Boundary Limitations – The requesting party shall first call the party nearest to the wildfire incident unless the specified resources of a more distant party are required. The responding party will furnish personnel and equipment as requested and as available, and/or impose a mileage limitation from the responding party's jurisdictional boundary. Any mileage limitations will be identified and agreed to by all participating parties and shall be specified in the Annual Operating Plan.
- Time/Duration – It shall be the responsibility of the requesting party to release the resources loaned by the responding party in a timely manner so as to ensure that the resources loaned by the responding party are not needlessly detained. If appropriate, a time limitation as to number of hours spent on any wildfire incident may be imposed. Any time limitations will be identified and agreed to by all participating parties and shall be specified in the Annual Operating Plan.
- Qualifications/Minimum Requirements – The qualifications of fire suppression and prescribed fire personnel, minimum requirements for personal protective equipment, and fire equipment performance standards will be identified in an Annual Operating Plan by the parties to this agreement in accordance with their respective standards. The responding party will send only those resources that meet the identified qualifications, requirements, and standards.
- Reimbursements/Compensation – Except otherwise herein specified, the requesting party shall not be liable for any compensation to the responding party for the loan of equipment or personnel. All incidents that require reimbursement and/or compensation will be identified and agreed to by all participating parties through a cost share agreement.
- Appropriation Limitations – Parties to this agreement are not obligated to make expenditures of funds or reimbursements of expenditures under terms of this agreement unless such funds are appropriated for that purpose by the Congress of the United States of America, by the Counties of _____ by the Cities of _____ and/or the Governing Board of Fire Commissioners of _____.
- Annual Operating Plan – An Annual Operating Plan will be prepared and used to define and update specific operating procedures prior to each fire season.
- Termination Procedure – This agreement shall remain in full force and effect unless canceled by any party to this agreement on written issuance of 30 days notice. If any party determines to withdraw from this agreement, withdrawal shall be effective on service of written notice to all other parties.

Annual Operating Plans

Each agreement shall be accompanied by an Annual Operating Plan which shall be reviewed, updated, and approved annually prior to the fire season. The plan may be amended after a major incident as a part of a joint debriefing and review. The plan shall contain detailed, specific procedures which will provide for safe, efficient, and effective operations. The following items shall be addressed in the annual operating plan.

- Responding Party – All parties should be aware that there may be many opportunities in which the Responding Party may not have the ability to provide mutual aid. Lack of response could result from limited or unavailable fire suppression personnel prior to or after fire season or multiple fires occurring during the fire season. Rural fire districts may also experience their own fire situations and/or may not have adequate numbers of qualified fire personnel or appropriate fire suppression equipment to meet the request. In this case, a secondary request for low exposure equipment, such as a water tender, may be appropriate.

- Command Structure – Unified command should be used, as appropriate, whenever multiple jurisdictions are involved unless one or more parties request a single agency Incident Commander. If there is a question about jurisdiction, fire managers should mutually decide and agree on the command structure as soon as they arrive on the fire and this should be confirmed by Agency Administrators as soon as possible. Once this decision has been made, the incident organization in use should be relayed to all units on the incident as well as dispatch centers. In all cases, the identity of the IC must be made known to all fireline and support personnel. FWS will assign an agency representative (AREP) to the cooperating protection agency prior to the initiation of suppression on a mutual aid fire. This individual should be qualified (preferably) at the IC Type 4 level, or at a minimum as a Single Resource Boss. The representative will be equipped with a radio and will be fully cognizant of fuels, terrain, weather, strategy and tactics, safety issues, procedures, etc. The representative will remain with the cooperating “Officer in Charge” to ensure that communications, strategy and tactics, and all related issues and actions are dealt with in a safe, effective, and efficient manner. With small rural fire departments, the AREP’s radio may be the only communication link.
- Communications – In mutual aid situations, the common designated radio frequency should be a “direct” or “line of sight” frequency. Responding and Requesting Parties should monitor for any change in weather conditions or any emerging safety or emergency situations. Once Command decisions are made, they must be transmitted and confirmed over the Responding and Requesting Parties’ tactical frequencies. Clear text should be used, and use of personal “identifiers” and non-ICS acronyms should be avoided. (For example, a FWS radio transmission such as, “Jones, Dispatch” would likely be meaningless to a mutual aid cooperator who is not familiar with “Jones.”) Radio protocol and equipment availability/capability may be that the fire departments and FWS would each be using their own tactical frequencies in fire suppression and allowing the FWS “direct” frequency to be the communication link between the Responding and Requesting Parties for Command and/or emergency situations. However, continuous use of separate frequencies could result in miscommunication; for this reason, it is important that the AREP be able to monitor multiple frequencies. This paragraph in the Annual Operating Plan shall meet FCC requirements for documenting shared use of radio frequencies.
- Distance/Boundaries – Responding and Requesting Parties should identify any mileage limitations from mutual boundaries where “Mutual Aid” is either pay or non-pay status. Also, for some fire departments, the mileage issue may not be one of initial attack “Mutual Aid” but of mutual assistance. In this situation, you may have the *option* to make it part of this agreement or identify it as a situation where the request would be made to the agency having jurisdiction, who would then dispatch the fire department.
- Time/Duration – Responding and Requesting Parties should identify time limitations (usually 24 hours) for resources in a non-reimbursable status, and “rental rates” when the resources are in a reimbursable status. Use of NWCG or Geographic Area interagency equipment rates is strongly encouraged.
- Qualifications/Minimum Requirements – Agreements on minimum qualifications for fire personnel, minimum requirements for Personal Protective Equipment (PPE) and performance of fire suppression equipment may require some flexibility. FWS has agreed to accept cooperator’s standards. These standards are generally reasonable and can be accepted for mutual aid. Do not knowingly place cooperator resource in situations which do not match their qualification or experience levels. This must be determined prior to assignment.

Federal (NWCG) and NFPA minimum training requirements for firefighters (FFT2) are: Firefighter Training (S-130) and Introduction to Fire Behavior (S-190).

In addition, Federal policy requires “Standards for Survival.” This is usually taught as part of the S-130 package. Also, Incident Command System (I-100) is recommended.

These minimum training requirements may be the most difficult to attain for some of the small and rural fire departments. These departments rely on volunteer firefighters who typically receive training at monthly (weekend or evening) meetings. Adding an additional 32-40 hours of wildland fire training to their existing training may be prohibitive in the short term. To overcome this obstacle;

- Invite the Training Officers of the fire departments who, in turn, could provide additional training to volunteers.
- Encourage trainees by invitation to attend Federal or State fire schools.
- Identify a consolidated wildland train-the-trainer cadre from several fire departments to reduce the number of trainers that need to be trained.
- If training is being provided to our personnel during a weekend, an invitation could be extended. Training over two weekends would provide sufficient time to complete the S-130 and S-190 courses.

Wildland Fire Personal Protective Equipment Requirements: See NFPA and NWCG standards. The NFPA standards are essentially identical to those of NWCG, but may be more acceptable because of the nature of these two organizations.

Physical Fitness Requirements: Include the Work Capacity Test and/or a physical agility test that is in compliance with NFPA Standards 1001 or 1500.

Engines or Related Equipment: Engines and fire suppression equipment should meet NFPA standards.

- Reimbursement/Compensation – Compensation should be reasonable “standard” for all fire departments in the state. The rates identified shall be used. Reimbursements could be negotiated as some fire departments may not expect full compensation but only reimbursement for their actual costs. Also, whenever possible, equipment and operators should be contracted as a unit and paid at a flat rate. Vehicles and equipment operated under the Federal Excess Property System will only be reimbursed for maintenance and operating costs.
- Cooperation – The Annual Operating Plan will be used to identify how the cooperators will share expertise, training, and information on items such as Prevention, Investigation, Safety, Training.

Any agreement which obligates Federal funds or commits anything of value must be signed by the appropriate warranted contracting officer. Specifications for funding responsibilities should include billing procedures and schedules for payment. Any agreement that extends beyond a fiscal year must be made subject to the availability of funds. Any transfer of Federal property must be in accordance with Federal property management regulations. All agreements must undergo periodic joint review and, as appropriate, revision. The best general reference on agreements (except for terminology) is "Partnership for Efficiency Through Cooperative Agreements" by the National Wildfire Coordinating Group.

Mutual aid agreements should be considered as two-way agreements whereby on average as much is given as is gained. As such, they do not contribute to the FIREBASE analysis.

Contracted Protection

Contracts may be used where they are the most cost-effective means for providing fire protection commensurate with established standards. A contract, however, does not absolve a Refuge Manager of the responsibility for managing a Refuge fire program. The Refuge's approved Fire Management Plan must define the role of the contractor in the overall program.

Contracts should be developed and administered in accordance with Federal Acquisition Regulations. In particular, a contract should specify conditions under which abandonment of a Refuge fire might occur in order to allow response of committed resources to higher priority incidents.

Emergency Assistance

In the absence of any formalized agreements, emergency assistance may be provided by the Fish and Wildlife Service to adjacent jurisdictions upon their request. Some State and local departments, however, will not provide assistance to neighboring jurisdictions without a completed agreement. Even refuges with very infrequent fire occurrence must develop agreements with their neighboring agencies so emergency assistance can be provided and reimbursed.

FEMA and the Wildland Fire Program

Under provisions of the Robert T. Stafford Disaster and Emergency Assistance Act (P.L. 93-233, as amended) and the Executive Order 12148, Federal Emergency Management (July 20, 1979, as amended) wildland agencies provide assistance to Presidential declared disasters and emergencies nationwide. The [Federal Emergency Management Agency](#) (FEMA) is the overall coordinator of the Federal Response Plan (FRP) which guides 26 Federal agencies and the American Red Cross in response activities. The FRP is based on the fundamental assumption that a significant disaster or emergency will overwhelm the capability of State and local governments to carry out extensive emergency operations. These operations have been grouped into 12 Emergency Support Functions (ESF); and departments and agencies have been assigned primary and support responsibilities for each of these functions.

In the Federal Response Plan, the Forest Service is the primary agency responsible for ESF #4: Firefighting. The BLM has been assigned support responsibility for ESF #4 and for other emergency support activities, as requested.

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[Back](#)
Exhibit 1-1-1: GUIDE FOR INSTRUMENT SELECTION

PURPOSE	FEDERAL ROLE	FEDERAL INVOLVEMENT DURING PERFORMANCE	INSTRUMENT
Acquisition of goods or services for Federal use	Purchaser-user	No substantial involvement except in special circumstances provided in the contract.	Procurement Contract signed by Contracting Officer
Acquisition of goods or services for Cooperator	Purchaser-donor	Responsible for assuring performance	Procurement Contract signed by Contracting Officer
Assistance, monetary, or non-monetary to support or stimulate a public objective	Financial supporter and participant partner	Substantial involvement, as defined by OMB guidance	Cooperative Agreement signed by Contracting Officer
Assistance, monetary to support or stimulate a public objective	Financial supporter-patron	No substantial involvement, as defined by OMB Guidance	Grant
Mutual assistance relationships with non-Federal entities or individuals (non-monetary)	Partner	Substantial involvement as required by memorandum	Memorandum of Understanding signed by appropriate official
Receipt of funds by FWS from non-Federal entity	Recipient	Substantial involvement as required by memorandum	Memorandum of Agreement signed by appropriate official
Acquisition from or cooperation with another Federal agency	Partner or purchaser-user	Substantial involvement as required by agreement	Interagency Agreement signed by Contracting Officer or appropriate official



U.S. Fish & Wildlife Service

Fire Management Handbook



1.2 FIREBASE

FIREBASE is a Windows based system which FWS designed and uses to program and budget for all fire management needs. These include preparedness, prescribed fire and fuels management. Funds and staffing are allocated based on the fire workload history for each station. Suppression operations and emergency rehabilitation are both funded by the Department of the Interior Wildland Fire Operations account and expand and contract as necessary to meet the emergency workload.

Preparedness

Preparedness needs are forecast based on the historical wildland fire occurrence at each refuge with weather and fuel conditions factored in as well. Staffing, equipment and funds are projected to provide sufficient initial attack capability to successfully suppress 95% of the unplanned fires which occur within the 97th percentile of the local Burn Index (measure of potential fire severity). This figure is known as Most Efficient Level. While this may seem like a complicated process it is mostly transparent to the refuge user. Staffing and budgets are not established at the levels necessary to suppress 100% of the unplanned wildland fires. No Federal wildland fire agency attempts to suppress 100% of their fires because the costs outweigh the resource benefits. Additionally, Congress has never appropriated 100% of the Service's projected MEL needs.

Preparedness is more than just the ability to initial attack fires. It also includes training, medical and job task related testing of personnel, planning, maintenance and acquisition of equipment and supplies, interagency coordination, statistical analysis, and everything else required before firefighters are ready to do their jobs.

Hazardous Fuels Reduction Operations

Hazardous fuels reduction operations includes the application of prescribed fire to reduce unwanted fuel loads and the use of prescribed fire as a resource enhancement tool. FIREBASE includes particular emphasis on FWS prescribed fire activities and needs. It assists in determining the needed staffing and documents the support needs to safely and efficiently manage prescribed fire programs. Funding for the Hazardous Fuels subactivity actually comes from the same account as suppression operations. This approach was justified to give the Interior bureaus flexibility in conducting prescribed fires and fuels management activities. This flexibility brings with it responsibility to carefully oversee the use of these funds in a manner strictly dedicated to fuels management activity. An annual fund target is established based on the project proposals submitted and approved in FIREBASE. Suppression Operations Wildland fire suppression operations are funded from the wildland fire operations account, formerly known as emergency suppression operations. While the total account is a finite appropriation, it is based on the average costs for suppression and rehabilitation for Interior bureaus over the previous 10 years. In practice, there is an open ended authority to expend suppression funds as needed to manage wildland fires, and in certain instances to temporarily increase staffing for extreme fire potential situations. The agency fire management plan dictates what kind of management actions will be taken and the Wildland Fire Situation Analysis gives specific direction for any particular major fire incident. Emergency rehabilitation also comes from the operations account. The use of these funds for rehabilitation is limited.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Prev. Analysis\]](#) [\[Prevention Plan\]](#) [\[Emphasis Prog.\]](#) [\[Training & Funding\]](#) [\[Interagency Coop.\]](#)



1.3 FIRE PREVENTION

The intent of this chapter is to provide direction for wildland fire prevention/education efforts, define individual roles and responsibilities, provide a prevention analysis process, and identify special wildfire prevention emphasis programs. Reference NWCG Handbook 4, Wildfire Prevention Handbook, PMS 450-1, NFES 1818.

1.3.1 PREVENTION ANALYSIS

The scope, content and need of the wildland fire prevention plan shall be based upon a fire prevention analysis. The analysis shall be conducted as follows:

- **Determination of Risks.** Risks are defined as any heat source or human activity that can result in wildland fire ignition. Risk assessment is the most important element of the analysis and is the foundation upon which the refuge's fire prevention plan is built. All potential ignition risks should be plotted on a topographic base map overlay of the refuge. Risks to be plotted shall include all areas of concentrated use and incidents of human caused wildland fires for the past five to ten-year period.
- **Determination of Hazards.** Hazards are defined as the fuels and the topography on which a wildland fire will spread. On a clear overlay of the base map, the areas of fuels and topography that present the greatest resistance to control, such as heavy fuels on steep slopes, should be encircled and labeled as "HIGH HAZARD" areas. Areas which present moderate resistance to control, such as medium concentrations of continuous fuels in less rugged topography, should be encircled and labeled as "MODERATE HAZARD" areas. Everything remaining will be labeled as "LOW HAZARD" areas.
- **Determination of Values.** Values are defined as areas where losses from wildland fire would be significant. Since the determination of values is subjective, they will be formulated through an interdisciplinary process. Values may include Fish and Wildlife Service structures, cultural resources, developments, inholdings, sensitive habitats, endangered species, watersheds, nearby (within 100 feet of the refuge boundary) private structures, and adjacent land. On a separate overlay of the base map, encircle those areas of high and moderate value as determined by the interdisciplinary team. Label these as "HIGH VALUE" (loss is unacceptable and cannot be easily mitigated) or "MODERATE VALUE" (loss is unacceptable but when mitigated do not affect objective achievement) areas. Everything remaining will be labeled "LOW VALUE."
- **Assessment of Priorities.** Assemble the base map with the overlays. Overlapping areas of concentrated risk, high and moderate hazards, and high and moderate values will indicate the highest priorities for fire prevention programs. This assessment provides the foundation for the fire prevention plan for the refuge.

1.3.2 PREVENTION PLAN

Overview

The prevention analysis will provide the manager with a tool to determine if a prevention problem exists. The manager will then decide what level of prevention, if any, is required for a refuge. The fire prevention plan will be developed and implemented through education, engineering, and

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Prev. Analysis](#)

[Prevention Plan](#)

[Emphasis Prog.](#)

[Training & Funding](#)

[Interagency Coop.](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

enforcement activities. The fire prevention analysis should become an appendix to the refuge's Fire Management Plan. The prevention chapter in the FMP should be a brief summary of objectives and general action items established through this analysis process.

Fire prevention programs directed toward fire protection are legitimate FIREBASE funded programs. Programs directed toward the ecological role of fire and the use of fire in resource management may be funded out of the benefitting activity.

The plan should identify fire prevention actions and programs needed to reduce the likelihood of ignitions in areas where wildland fire is unacceptable, and should also identify who is responsible for each activity and when each will be accomplished.

Technical direction for development of the fire prevention plan will be based upon the NWCG Wildfire Prevention Handbook 4, Chapter 20, Wildfire Prevention Planning.

[Outreach in Prevention](#)

The Service's National Outreach Strategy should be applied when dealing with prevention. Outreach is two-way communication between the Service and the public to establish mutual understanding, promote involvement, and influence attitudes and actions, with the goal of improving joint stewardship of our natural resources or in this case, the loss of our natural resources.

- [Fire Management Outreach Guidelines](#). This chapter focuses on prevention but the following guidelines apply to all fire management activities where publics need to be reached.
 - Utilize Outreach planning to include public input in Fire Management Plan development.
 - Communicate the role of fire in maintaining and restoring ecosystems on National Wildlife Refuges.
 - Communicate the role of prescribed fire in achieving specific refuge management objectives.
 - Communicate the role of prescribed fire and wildland fire use in reducing hazardous fuel levels and improving the protection of identified resources from unwanted wildland fires.
 - Communicate the importance and benefits of preventing human-caused fires.
 - Communicate to individuals and communities the importance of undertaking defensible space initiatives to improve protection from unwanted wildland fires.
 - Develop partnerships with other agencies and the public to promote effective and cooperative fire management.

[Plan Implementation](#)

- Education. Prevention programs utilize a variety of methods to inform the public of the need for fire prevention. The specific activities are intended to create and maintain public and Fish and Wildlife Service awareness, understanding, and support. It should be stressed in all public education efforts that a person causing a fire can be held civilly liable for the cost of suppressing the fire as well as being charged criminally.
 - Printed Materials. Printed materials, including general information handouts, site bulletins, and refuge brochures, should include a fire prevention message. The use of the Smokey Bear logo should be encouraged in order to emphasize the prevention message. Smokey draws immediate attention to and enhances any fire prevention message. The Smokey Bear program has been the historical source of prevention materials. There are several other groups now developing material that will support the prevention program within the Fish and Wildlife Service. The National Wildfire Coordinating Group's (NWCG) Wildland Fire Education Working Team and the Wildland/Urban Interface Steering Group in conjunction with the National Fire Protection Association (NFPA) have developed material that is available. Some material is available through the National Interagency Fire Center's (NIFC) Publication Management System (PMS).
 - Media. Media campaigns should be initiated which include show-me tours, photo opportunities, and demonstrations, and solicit support for public assistance in fire prevention programs. The refuge should develop public service announcements and media releases for use by all mass media outlets. Where refuge information stations exist, fire prevention messages should be included which inform visitors of current fire conditions or visitor use and access restrictions.
 - Signs and Posters. Appropriately located signs and posters with carefully worded prevention messages are effective. Signs and posters at entrance stations provide an excellent opportunity to alert visitors about local fire conditions and any restrictions. Technical information concerning types of signs and posters can be obtained in NWCG Fire Prevention Handbook 4, Chapter.
 - Visitor Services and Facilities. Fire prevention information can be integrated into existing visitor service and interpretive presentations, posted on bulletin boards, and used in temporary facilities.
 - Personal Contacts. Refuge, cooperating association, and concession staffs play an important role in communicating the fire prevention message in all personal contacts.
 - Internal Communications. Refuge personnel and concessionaires shall be aware of fire prevention procedures and communicate these to the public. Internal newsletters, bulletin board posting, staff meetings, dispatch morning reports, on-refuge training programs, and tailgate sessions all provide excellent opportunities to communicate fire prevention messages
 - Outreach Programs. Fire prevention messages should be incorporated into off-site programs presented to schools, civic groups, and other organizations. Fire prevention information can also be presented at on-site workshops, seminars, and other educational programs.
- Engineering. Fire prevention engineering is the process of reducing risks and hazards by shielding or removing heat sources, or by removing fuels. Prevention engineering includes activities such as moving fuel away from roadways, removing vegetation from around a structure, creating firebreaks around campgrounds, and using spark arrestors on internal combustion engines and fireplaces. Prescribed fire can be used to reduce fuels, thereby minimizing the threat of ignition or fire spread. Technical information on other engineering areas such as power lines, rights-of-way, and industrial activities can be found in NWCG Wildfire Prevention Handbook 4, Chapter 50.

- Enforcement

- Visitor Use Regulation. Fire prevention enforcement should be practiced at the minimum level necessary to gain compliance with fire laws and regulations
- Fire Investigations. The inadvertent or intentional ignition of wildland fuels by humans is a crime. All wildland fire will be investigated at the earliest possible time. The investigation may range from a documented determination of cause by the initial attack fire crew to criminal investigation by a qualified arson investigator. The primary job in investigation will be to obtain all the information and evidence possible to identify the responsible party. The initial actions by the fire crew on the fire will affect the investigation's chance for success. Every initial attack fire fighter needs to receive minimal training in finding and protecting the point of origin. They must also understand how to protect the point of origin and any possible evidence. Much of this is covered in the Wildfire Cause Determination Handbook of the NWCG. All violators will be held liable for civil costs and for appropriate criminal action when laws or regulations have been violated. Cash rewards from appropriated funds are authorized to be paid upon arrest and conviction of known arsonists from suppression funds. The option to offer these rewards must be coordinated through the RFMC and local law enforcement agencies.
- Public Use Restrictions. The Refuge Manager has the authority to impose public use and access restrictions in times of high fire danger. These public use restrictions could include:
 - Restricted fire use, i.e., no fires outside developed sites, no fires in back-country, etc.
 - Restriction of public use activities, i.e., off-road vehicles, back-country access, etc.
 - Restriction of refuge operations or contract activities, i.e., construction, blasting, chain saw use, etc.
 - Total or partial closure of the refuge.
- Coordinating Closures. All closures will be coordinated with adjacent State and Federal land management agencies. Joint agency closures can be very effective; they are easier to manage and better understood by the public when lands of similar hazard, regardless of ownership, are treated the same. All Federal, State, and local organizations responsible for wildland fire control should be notified when possible and a coordinated closure or restriction issued.
- Extreme Fire Hazard Alerts. During periods of extreme fire hazard, special actions may be required to prevent unwanted wildland fire.
 - Daily Weather Forecast. Request that the National Weather Service cooperate with the wildland fire agencies and issue a special alert for extreme fire conditions with the Daily Weather Forecast.
 - News Media. Provide the news media with a copy of the public alert, closure restriction, or advisory of existing fire conditions.

Wildfire Prevention Plan Format ([Exhibit 1-3-1](#))

1.3.3 EMPHASIS PROGRAMS

Special emphasis programs are new or ongoing programs which can be instituted at all organizational levels. These would include:

Cooperative Forest Fire Prevention (CFFP)/Smokey Bear Program

Full details on all facets of the Smokey Bear Program can be found in NWCG Handbook 4, Chapter 40.

Wildland-Urban Interface

The wildland-urban interface is an increasing national problem affecting all agencies. The encroachment of structures and developments into rural areas has made fire suppression and fire

prevention activities much more complex. Prevention activities that can be effective in urban interface areas include:

- Fuels Modification. It is recommended that flammable vegetation be cleared for 30 feet around structures (including Fish and Wildlife Service owned structures), but clearance requirements may be greater in areas where slopes and heavy fuels are involved. Woodpiles and other flammable materials should be stored away from the structure.
- Construction Materials. Structures with wood roofs and sidings are much more vulnerable to fire ignition. Developers and homeowners should be encouraged to install non-combustible roof materials when possible.
- Roofs and Chimneys. Chimneys should be equipped with spark arrestors of no more than 1/2" non-combustible screens. Roofs should be kept clear of leaves and needles.
- Access. Access roads to structures should be cleared sufficiently to allow fire trucks safe access and exit. It is always desirable to have two separate routes of access.
- Water. A good water supply is critical. In areas where water flow is low, an auxiliary water tank with pump may be necessary.
- Open Flame Sources. Incinerators, barbecues, welders, and similar open flame sources should have sufficient clearances from flammable vegetation. A hose and shovel should be kept nearby when burning is underway.

Volunteers In Prevention

Volunteers can be utilized in wildland fire prevention in compliance with Fish and Wildlife Service guidelines on the use of volunteers in refuges.

1.3.4 PREVENTION TRAINING, POSITIONS AND FUNDING

All Fish and Wildlife Service personnel have fire prevention responsibilities. To ensure employees have a basic understanding of fire prevention, all Fish and Wildlife Service employees should complete Introduction to Wildfire Prevention. This basic course is available for purchase through the NIFC Publication Management System.

The refuge should also work with their local cooperators to develop effective fire prevention training programs for the mutual benefit of both.

Upon completion of the Prevention Planning process and its approval and addition to the Fire Management Plan, positions or funding may be justified to achieve identified and realistic goals. Any request from FIREBASE funding will only be considered when the approved Fire Management Plan documents the need.

1.3.5 INTERAGENCY COOPERATION

Interagency cooperation is critical at all levels. Fire prevention programs can be much more effective when resources and programs are coordinated and shared among agencies. Careful coordination is needed so that programs are complimentary and reinforce, rather than contradict, each other.

Cooperative fire prevention programs should include the institution of interagency committees, the development of interagency public education programs, and the development and coordinated release of news stories to the media.

The promotion of fire prevention should be strongly considered. Cooperative efforts in fire prevention activities with other local fire authorities provide an excellent avenue for establishing cordial relationships which pay dividends at the time of an emergency.

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Exhibit 1-3-1: WILDLAND FIRE PREVENTION PLAN FORMAT

INTRODUCTION

[Back](#)

In order to implement a Wildfire Prevention Plan (WPP) as an integrated element of the fire management program, wildfire prevention programs must be concentrated on identified areas of concern. Wildfire prevention efforts must be directed toward ignitions which pose the greatest potential to cause unacceptable damage or losses. Using wildfire prevention as a strategy based on the threat of the ignition integrates it into the fire management program.

To properly direct wildfire prevention efforts, it is important to accurately identify problems or potential problems. Any wildfire prevention planning process which does not carefully assess or identify wildfire prevention problems is likely to fail. To identify priority wildfire prevention programs, one must look at a number of variables. For the purposes of preparing the WPP variables are categorized as:

1. **Risks** - Risks are defined as those uses or human activities which have the potential to result in wildland fire ignition. When assessing the risk of a given area, only the RISK should be examined. The potential for a fire to spread or burn will be looked at separately; these two items should not be confused. Wherever there are concentrations of people or activity, the potential for a human-caused ignition exists. After assessing the risks within an area, it may be helpful to look at historical fires to validate the risk assessment. Historical fires alone, however, are not an accurate reflection of the risks within a given area. The objective of this effort is to determine the degree of risk within given areas of an administrative unit.
2. **Hazards** - Hazards are defined as the fuels and topography of an area. The objective in examining hazards is to determine the potential for a large fire to result from a human-caused ignition. This could be more simply put as determining the degree of difficulty in suppressing a fire once it is ignited. It is important to examine hazards without regard for anything else.
3. **Values** - Values are defined as natural or developed areas where loss or destruction by wildfire would be unacceptable.

Once Risks, Hazards, and Values have been evaluated, it will be possible to determine when, where, and how to implement effective fire prevention programs. By comparing an area's potential for an ignition (risks) with its potential to burn after ignited (hazards), and the values which are threatened by a wildfire (values), an effective fire prevention plan can be written. This plan should concentrate on the highest priority wildfire prevention problems within an administrative unit. It may not be necessary to have an extensive fire prevention effort in an area with a number of risks where the hazard is minimal and there are no real values threatened. In contrast, it will be important to have a comprehensive effort in an area where there are substantial risks, a high hazard, and high values threatened.

The WPP should address what needs to be done in each area based on the types of activities and uses. It should clearly define what actions will take place, when, and who is responsible. Wildfire prevention activities generally fall within one of three broad categories. These categories include:

1. **Education** - Education is aimed at changing people's behavior by informing them. This can be done through printed materials, mass media (radio, TV, etc.), one-on-one contacts, or group presentations. Information can also be delivered through signs, displays, fairs, parades, etc.
2. **Engineering** - Engineering is an activity designed to shield an ignition source (e.g., spark arrestor) or remove the fuel which would ignite from a spark (clearance around a home).
3. **Enforcement** - Enforcement is used to gain compliance with fire codes and ordinances.

The wildfire prevention plan should select the most cost effective mix of activities to mitigate potential fire problems within each priority area and be evaluated annually. If ignitions are occurring in an area where an active fire prevention program is implemented, perhaps the fire prevention activities should be reviewed and updated.

NOTE: The analysis will become an appendix to the refuge's Fire Management Plan. The prevention chapter should be a summary of objectives and general action items established through the analysis process. The appendix will be the specifics for each identified compartment and action.

OBJECTIVE

The objective is to provide direction and guidelines for the following activities:

1. Assessing wildfire prevention problems.
2. Establishing realistic, cost-efficient fire prevention goals.
3. Developing wildfire prevention activities focused on unacceptable wildland fire ignitions.

WILDFIRE PREVENTION

Fire prevention traditionally has been viewed as a program striving to eliminate all human-caused wildfire, thereby eliminating or reducing the need for other components of a fire management program. This holistic approach to human-caused fires, while ambitious, is unrealistic and not achievable. The true objective of wildfire prevention is to reduce the likelihood of human-caused wildland fire ignitions which could result in unacceptable loss. In order for fire prevention to be viewed as an integrated tool within the fire management program, it must be utilized differently.

This will assist in identifying how fire prevention can be used as an effective management strategy within the over-all fire management program. The key to determining when to use fire prevention programs is the accurate assessment of the refuge's wildfire problems. In order to assess the wildfire problem, a three-step process will be used.

1. Analyzing risks (likelihood of a wildland fire ignition).
2. Analyzing fuels and topography (potential for wildland fire to spread and resist suppression actions).
3. Assessing values (natural, cultural, political, and developed improvements) which may be threatened by a wildland fire.

This will provide a systematic, step-by-step process to make objective, cost-efficient decisions concerning when and where fire prevention management strategies are applied.

PREPARATION FOR THE ASSESSMENT

Gathering Materials. To conduct the assessment, it will be necessary to make some preparations. Materials should include:

1. 4 or 5 topographic maps of the refuge.
2. Acetate for 4 overlays.
3. Grease pencils or markers in a variety of colors to outline areas on overlays. Black, green,

blue, and red are required in the final product.

4. Reference materials which include:

1. Up to 10 years of historical human-caused fire data by location, ignition source and date.
2. Plans - Fire Management Preparedness and Planning chapter, operational plans, fire management plans, compendia, interpretive prospectus, etc.

Building Support. Prior to initiating the development of the prevention chapter, build support for the effort. Inform line officers and supervisors of the objectives of the prevention planning process and obtain their support and advice. This will be crucial to the successful implementation of the program. It is also necessary to use an interdisciplinary approach when you develop your refuge's values. Resource Specialists, Ecologists, Wildlife Specialists, Law Enforcement Specialists, et al., should be included. Arrange a time and place for them to assist in developing resource values and program actions. This will be explained in detail in the section on rating values and developing final compartments.

CONDUCTING THE ASSESSMENTS

The assessment will consist of three distinctly different steps. It is important that each step be conducted independently with no attempt to blend or combine any of them. Each step must be done with a singular focus, and in the order presented.

Through all the steps the ratings of high, medium, or low will be assigned. It is important to keep in mind that these are relative ratings, not absolutes.

Risk Assessment.

1. **Process:** Assessing Risks consists of evaluating the potential for wildland fire ignition. It does not consider how or if a fire will spread or burn once ignited. In this sense, Risk equates to activity or use. Concentrations of use, developments, or activities should be identified. Do not plot or consider historical fires at this point. As the analysis proceeds, a validation of sorts can be accomplished by comparing current concentrations against the historic ignition patterns. If this is done, avoid the trap of forcing all compartments into the historic patterns. The flexibility of this planning process is that it permits the manager to anticipate changes in risk due to expected use or demographic changes. Factors important to Risk analysis include:
 1. User activity concentrations
 2. Proximity of cause agents
 3. Amount of use
 4. Identification of who is involved
 5. Specification of where the people come from
 6. Similarity between activities
2. **Action:** On a clear overlay on the base map, circle concentrated use areas in red. Try to keep identified areas broad. Travel corridors, developed areas, recreational use areas, etc, can be encircled in large blocks. Label these areas as high risk. Other areas which have some use, but less than the obviously high areas, should be circled and labeled as medium. All remaining areas will be considered low risk.

Hazard (Fuel/Topography) Assessment. In fire prevention terminology, the word "hazard" is used to described the relationship between fuels and topography and must not be confused with how hazard is defined in other disciplines. For purposes of this exercise, hazard and fuel/topography are

synonymous.

1. **Process:** The fuel/topography assessment deals with identifying areas of like fire behavior based on fuels and topography. Given a normal fire season, how intense, and at what rate of spread will a wildfire burn? What is its resistance to control? Again, it is important to keep a single focus. Do not confuse this process by considering potential for an ignition or values threatened; concentrate only on how a fire will burn. Under average fire season conditions, fire intensity is largely a product of fuels and topography.
2. **Action:** Remove the Risk area overlay and place a new overlay over the base map. With a green marker encircle broad areas where fires will burn and will be difficult to stop or control. These should be labeled as high fuel/topography areas. Keep the areas broad; if small pockets of fuels or topography differ from a larger general area, don't be concerned. Include them in the larger area. After encircling areas which present the most significant problems (high), encircle areas of moderate fuels and topography. Again, keep the areas broad. All remaining areas not labeled high or medium will be considered low.

Each refuge throughout the country will have different criteria for making distinctions between high, medium and low.

Values Assessment

1. **Process:** Assessing values is a more subjective process. During this process, an interdisciplinary approach must be used. A variety of specialists must be encouraged to participate.
2. **Action:** With a new overlay, encircle broad areas of value, using a blue marker. Areas of value may include, but are not limited to:
 1. Rare and endangered species
 2. Wildlife habitat (both game and non-game)
 3. Merchantable timber
 4. Wilderness, (existing or proposed)
 5. Residential/commercial development
 6. Developed recreation and associated areas
 7. Political values
 8. Watershed values
 9. Aesthetic values
 10. Private inholdings

These values should be viewed as areas where wildland fire would be unacceptable.

Individual refuges may have existing inventories of values which have been identified in other planning processes. Areas of obvious value should be labeled high. Other areas which have some value, but are less in relative comparison, should be encircled and labeled as medium. Everything else should be considered Low. Do not be concerned about fire potential, ignition potential, or anything other than values during this process. After values have been identified, consider lumping like value areas which are in close proximity.

Adjusting Risk Areas. Now that the process of developing Risk, Fuel/Topography, and Value areas is complete, it is time to make some adjustments. Plot 5 to 10 years of historical human-caused fires on the base map. (The number of years should be determined by the volume of fire incidents the refuge has experienced over time). Make sure there is a record of cause for each fire. This will be important later in developing specific fire prevention action items.

After plotting fires, place the risk area overlay over the map with the fires plotted. Compare the existing risk areas with historical fire occurrence. There is likely to be some correlation between concentrations of fires and risk areas. If there are fires which do not fall within high or moderate areas consider adjusting the risk boundary to include these fires, if appropriate. If these fires are unusual or isolated occurrences the boundary does not necessarily need to be altered. If a number of fires have occurred within a moderate area, consider upgrading the risk to high.

Some refuges may have limited or no records of historical fires and their specific causes. This is not a problem in developing the analysis. This is because a location that concentrates use (such as a stream with water based recreation or a community/residential development) may show a collection of "statistical" fire causes (such as campfires or smoker fires), all of which are related to a single activity pattern. A prevention program is more efficient in making contacts and is more likely to succeed if it targets broader categories instead of individual fire causes.

The use of "statistical" fire data is very helpful in adjusting/validating Risk areas and in helping to target specific prevention activities, but not a requirement in the development process. All refuges which do not have good records must begin to gather cause and occurrence data to validate future updates of the prevention plan.

Developing Final Compartments. The information necessary to establish final compartments is now in place. Take all of the overlays and place them on the base map. In order to establish final boundaries, the **risk areas** will be the **primary consideration**. Because fire prevention programs usually treat risks, it is logical that the final compartment boundaries be determined primarily by risks.

Take the base map with the risk overlay and place a new overlay on top of them. Trace over the risk areas in black; label them as high, medium, or low according to your original assessment.

After all of the risks have been assigned, remove the original risk overlay and place the fuel/topography overlay on the base map. Put the new overlay which has the risks identified on top. Identify the fuel/topography rating for each compartment in green. Again using the risk areas identified in black, assign a fuel/topography rating to each of either high, medium or low. If there are one or more fuel/topography ratings within the final compartment boundaries, assign one fuel/topography rating which best represents the entire area (interpolate).

Now that each area has been assigned a fuel topography rating, remove the original fuel/topography overlay. Place the value overlay on the base map and place the new overlay on top. Each compartment will now receive a value rating of high, medium, or low. If one or more values exist within the final compartment boundaries, it will be necessary to interpolate. Assign the value which best represents the entire area; label it in blue. The new overlay will now represent your final compartments with respective ratings. Examine the compartments and their ratings to ensure they generally reflect reality.

Documentation. The final step in conducting the fire prevention assessment will be to document the findings. These will be important in developing the fire prevention plan. The documentation should be brief and to the point. It will be necessary to list each compartment, zone or area with an assigned number or geographic name and a brief description of the ratings.

Example: Compartment 1 - Oak Creek

Risk - High - Concentrated use in the area around Oak Creek. History of escaped campfires, smoker fires.

Fuel/Topography - Moderate - Oak and hardwoods with fine flashing fuels on mild to moderate slopes.

Value - High - Recreational developments (campgrounds along creek) riparian area adjacent to creek.

After each compartment has been documented and the rationale for the ratings described, develop the prevention plan.

DEVELOPING THE FIRE PREVENTION PLAN

The fire prevention plan will consist of describing appropriate fire prevention actions for each compartment. Priorities should be determined by the previous assessments. If a compartment has a high Risk rating (high potential for an ignition), high Fuel/Topography rating (fire will spread and be difficult to suppress) and high Value, it will obviously be a priority for fire prevention actions. In contrast, a compartment with all low ratings may not call for any prevention efforts. If a wildland fire will not result in appreciable damage, it may be prudent to invest prevention resources in areas where a wildland fire will threaten higher values and would be more difficult to suppress.

Each compartment will require its own assessment when developing fire prevention plans. Actions should be commensurate with the relative ratings of each compartment. For the example compartment, fire prevention actions might look something like this:

Compartment 1 - Oak Creek - Prevention actions - Place signs at entrance to campgrounds on safe campfire use and smoking. Make weekend patrols of high use areas along the creek. Assure that fire prevention messages concerning smoking and campfire use are incorporated into visitor information handouts.

After developing appropriate fire prevention actions for each compartment, it will be time to complete the final plan. If there are fire prevention actions which apply to the total unit, these should be listed as general fire prevention actions and listed first. These might include developing new handouts, assuring power lines are inspected and in firesafe conditions, assuring off-road vehicles are equipped with approved spark arrestors, etc. The remainder of the plan will consist of the actions (in priority) for each compartment. Be sure the plan identifies who will be responsible for the actions identified and when they should occur.

THE PREVENTION CHAPTER OF THE REFUGE FIRE MANAGEMENT PLAN

This fire prevention analysis should become an appendix to the refuge's Fire Management Plan. The prevention chapter in the FMP should be a brief summary of objectives and general action items established through this analysis process.

The following is an example chapter in the recommended format for the Fire Management Plan. This chapter can be more detailed for larger refuges or heavily used areas or very general. The bulk of the analysis will be displayed in the appendix.

PREVENTION CHAPTER OF THE REFUGE FIRE MANAGEMENT PLAN (Example)

Objectives

1. To reduce the threat of human caused fires through visitor and employee education.
2. To integrate the prevention message into interpretive programs.

General Actions

All members of the refuge staff will be familiar with this plan and be able to explain it to other interested parties.

Fire prevention will be discussed at each refuge safety meeting.

Smoking will be prohibited on all refuge trails when fire danger is very high or extreme. Signs will be placed to notify the public at all entrances and trailheads.

Interpretive programs will include fire prevention messages to alert the visitors concerning current fire conditions.

Fire Prevention Analysis

The fire prevention analysis is attached to this plan as an appendix. This appendix contains the detailed prevention actions identified for specific areas or fire problems in the refuge. It will be reviewed annually and updated if changes occur which alter the identified RISKS, HAZARDS, or VALUES.

EVALUATION

The fire prevention plan should be reviewed annually as stated in the prevention chapter. If human caused ignitions are occurring in new areas or increasing in identified priority areas, it may be time to

change the prevention strategy. The evaluation should concentrate on areas where specific problems are occurring rather than changing the entire plan. If the plan is working, there is no need to make changes.

As new recreational sites are developed or use and values change, the plan must be reviewed to determine if new actions are required, and the decisions made will be documented in that year's prevention plan.

EXAMPLE FIRE PREVENTION ANALYSIS

STEP #1

The first step is to develop a good base map. A map of 1:62500 is recommended; however, any scale can be used as long as major features pertinent to the planning process (such as campgrounds, road corridors, trails, recreation sites, developments, or other RISK/HAZARD/VALUES) can be clearly located. Do not use maps with zones from other planning processes (such as fire management zones).

STEP #2

The first overlay is the identified risk areas. Delineate broad zones; getting too specific only muddies the water at this point. Make sure each area is clearly marked with the appropriate rating and that it is drawn in RED.

This inventory identifies the causal agents and user activities with the potential to cause ignitions.

Examples of risks:

1. Water use areas
2. Camping areas (established or dispersed)
3. Transportation systems
4. Powerlines
5. Residential/commercial uses
6. Trails
7. Inholdings
8. Agricultural use
9. Interpretive sites

Identified risks are not necessarily equal in their potential for causing ignitions. For that reason, it is necessary to establish priorities so that, when a risk level is set for each risk area there is sufficient rationale for the decision.

The following criteria could be set for risk rating.

HIGH = concentrations of camping, high use trails residential/commercial areas

MEDIUM = dispersed camping, lesser used trails

LOW = little recreation or visitor use

Analyze all the factors. Then create the risk areas, plot them on the first overlay, and rate the areas in relation to each other as high, medium, or low risk. **Note:** Transportation corridors are not necessarily high or medium risk by themselves but their travel destinations may be.

STEP #3

The next task is to identify hazards (fuel/topography) on the second overlay. Hazard rating criteria, based on combinations of slope and fuel type must be agreed upon. For instance:

HIGH = brush fuels on 30 to 100%+ slopes

MEDIUM = grass fuels on 0 to 100%+ slopes, or brush on 0 to 30% slopes

LOW = timber on 0 to 100%+ slopes

Remember to set these ratings on the degree of difficulty in suppressing a fire should it occur in a given fuel/slope area. Outline and rate the hazard areas on the Hazard overlay in GREEN. This can be accomplished by comparing slope class to fuel type and then gaming each variation. As this process is followed, it is necessary to use broad generalizations or the variations become too numerous to rate into three levels.

If fire management analysis zones have been developed during other planning work and they are based on fuel/topography these may be used for the Hazard overlay. In any case, the units need to be evaluated in relation to all other units for rating the level of hazard.

STEP #4 (a+b)

On this third overlay, value areas will be defined. This effort must be interdisciplinary. As in the previous overlays, keep the areas broad and always rate them in relation to each other. Plot areas and ratings in BLUE.

In the example, general areas of consistent value were identified during a meeting between various staff specialists. All values were considered such as developments, watershed, cultural, aesthetic, soils, wildlife, plants and political considerations. Rating criteria were established as in the previous overlays and can be documented as the following:

HIGH = developed areas, established camp sites, rare plant occurrence, political

MEDIUM = dispersed camp sites, back-country cabins

LOW = little recreation use, fire poses no threat to plant or animal values

At first many small areas were identified on a draft overlay; then, working together, the staff interpolated the values in broader areas to develop the final Value compartments. The key again is to think in general overall terms.

STEP #5

The historical fires can be plotted on the base map, on a new overlay or on a separate occurrence map. Plot the fire in numerical sequence with an index attached.

Remember that the comparison of historical fires to the unit's risk areas is for verification and minor adjustments. There can be high risk areas with little or no recorded fires. That is why the comparison is done after the risk, hazard, and values have been determined. This preserves the broad picture and allows for flexibility in anticipating future patterns.

Knowing the specific causes of the historical ignitions will assist in the development of targeted actions for the final established compartments. Plotting future ignitions can also indicate a need to review or modify the prevention efforts as change occurs.

STEP #6

The three overlays are now integrated into one overlay or map of the whole refuge. The original risk area boundaries can be used for the final compartment, but as in the example other compartments can be designated to meet unique conditions. The process, however, must still remain fairly general.

Each final compartment must be identified by a name and a number and given a rating for risk, hazard, and value. For instance, Unit #1 may be given an LLL - meaning low risk, low hazard, and low value. A narrative must be written for each compartment, describing the factors that made up the ratings. Additionally, a prevention prescription must be written describing the specific prevention action to be taken and by whom. As in this example, refuges can write general actions that cover all compartments and only mention specific actions for an individual compartment, should that compartment have a unique prevention problem.

Now, with all the compartments rated, comparisons can be made on priority actions. Managers can immediately see that the analysis shows zones with an HHH rating should receive priority over zones which rated out LLL.



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Planning\]](#) [\[Fire Management Plan\]](#) [\[Reg. Dispatch Plan\]](#)



1.4 FIRE MANAGEMENT PLANNING

1.4.1 FIRE MANAGEMENT PLANNING

There are various types and levels of planning required to conduct a Fire Management Program and the complexity of the overall program in the Region will dictate the amount of effort required. The Regional level must look at the bigger coordination picture while the refuge or complex level must look at the detail of operations under various conditions. A key reason for preparing any kind of plan is to communicate a set of goals or desired results in such a manner that someone unfamiliar with purpose of the plan can determine those goals or results the same as the writer of the plan. **If the plan does not communicate clearly, the plan is inadequate.**

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Planning](#)

[Fire Management Plan](#)

[Reg. Dispatch Plan](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

Through planning, managers can reconcile differences in management philosophy and ideas before taking actions that have long-range resource effects. Good plans have a stabilizing influence on management, despite changes in personnel or multiple administrative influences. Plans that establish clear, attainable, measurable, and acceptable objectives for an area, and policies and actions by which such objectives are pursued, are essential for guiding fire management toward consistent outcomes.

Public involvement in the planning process will give the interested public an opportunity to learn about, evaluate, provide input, and become involved in a refuge's wildland fire management program. Effectiveness and consistency of wildland fire management, as well as the public's acceptance of that management and its implementation, are highly dependent on plans and the planning process.

The fire management program for the Fish and Wildlife Service is an integrated and complex program combining interagency obligations, national and regional coordination, refuge operations, and resource management. An integrated planning process is needed to provide direction, guidance, justification, and decision support.

[Regional Plans](#)

Each Regional Office are responsible for coordinating the fire management program of the Fish and Wildlife Service within the Region. To accomplish this requires several plans which should be completed on an interagency basis within the geographic area. Geographic plans may be used in lieu of the following regional plans as responsibilities are clear to FWS personnel:

- Regional or Geographic Fire Dispatch Plan
- Regional or Geographic Preparedness
- Regional or Geographic Mobilization Plan

Other operational support plans or agreements may be required depending on the overall fire management program within the Region and involvement with cooperating agencies. These plans should be developed as needed.

[Refuge Plans](#)

References

Rehabilitation

Land management planning is the responsibility of each refuge. Land management is the process of making land-use decisions for the future, setting objectives, implementing the correct actions to accomplish objectives, achieving outputs, and performing evaluations comparing results to objectives. In land management programs, objectives are used to establish desired outcomes for management actions. Objectives represent the single most influential factor in land management program implementation. They are fundamental to successful management to resolve issues and achieve desired land-use decision conditions.

In land management, both goals and objectives are important. Goals are primary and basic products of the long range management plans commonly referred to as land use decisions. They deal with large areas and long time periods. Land-use decisions establish resource condition objectives; allowable, limited, or excluded uses for an area and the term and conditions for such use; and recommend management actions to achieve desired conditions. Objectives, a necessary component of the planning process, provide a bridge between goals and implementation actions. They identify the changes in water, soil, air, or vegetation from the present condition to desired condition. Site-specific, treatment objectives must be developed to guide project level operations. These are very well-defined statements that describe what a treatment must accomplish in order to meet a resource management objective. These objectives must be specific, measurable, achievable, related/relevant, and trackable.

Land-use planning systems utilized by the Service provide the foundation for wildland and prescribed fire management programs.

Planning Tier	Goal/Objective	Product	Application
Geographically defined	Land-use decisions	Comprehensive Conservation Plan	Identification of the role of fire (use and/or exclusion) in achieving refuge objectives
Local guidance for individual response components	Resource management objectives	Habitat Management Plan	Integration of fire and resource management within a geographically defined management area
Local guidance for wildland fire management	Wildland fire management objectives	Fire Management Plan	Identification of appropriate allocation of fire suppression, fire use, and fuels management activities to achieve resource management objectives
Site-specific implementation	Treatment objectives	Prescribed Fire Plan, Wildland Fire Implementation Plan, Wildland Fire Situation Analysis, Other	Interpretation and analysis of site-specific conditions and development of specific treatment objectives to guide tactical implementation actions to effect on-the-ground changes.

Wildland fire management is directly influenced by the land management planning process. The flow of information begins with the Comprehensive Conservation and Habitat Management Plans; they determine the availability of land for resource management, predicts levels of resource use and outputs, and provides for a variety of resource management practices. Issues and opportunities are identified and acceptable alternatives are selected that address fire management needs for the geographic area encompassed by the plan.

The next planning process step is preparation of the Fire Management Plan (FMP). This represents the functional activity for the fire management program. The Fire Management Plan is the primary tool for translating programmatic direction developed in the Comprehensive Conservation and Habitat Management Plans into on-the-ground wildland and prescribed fire action. The Fire Management Plan synthesizes broad fire management goals and places them into a strategic context. Criteria for making initial action decisions must be a component of the Fire

Management Plan.

The most detailed step in the process involves the tactical implementation of strategic objectives for the wildland and prescribed fire management programs. It is, at this the project level, where specific plans are prepared to guide implementation of fire-related direction on the ground. Examples of project level plans include: Prescribed Fire Plans, Wildland Fire Implementation Plans (WFIP), and the Wildland Fire Situation Analysis (WFSA). The Fire Management Plan is also supplemented by operational plans such as preparedness plans, preplanned dispatch (per-attack) plans, and prevention plans. There may be other operational plans depending on program complexity.

The Review and Update of the 1995 Federal Wildland Fire Policy (January 2001) provides greater flexibility in the use of fire. Key to this flexibility is meeting the planning requirements in order to use the full spectrum of options available to manage wildland fire offered under the policy. These planning requirements must be met somewhere in the refuge planning process:

- Each refuge or complex will have a Fire Management Plan (FMP) in place which defines how to manage wildland and prescribed fire. Fire must be adequately addressed in the Comprehensive Conservation Plan (CCP), Habitat Management Plan (HMP) or (whatever management plan is used to manage the refuge) and that plan must have been through the NEPA process. If this is not the case, the FMP is then subject to NEPA requirements and an Environmental Assessment (EA) will be done. If there are significant effects, an Environmental Impact Statement (EIS) will be done. If neither plan has been through NEPA, the options for managing fire are restricted to suppression objectives only.
- The FMP must contain measurable and objective prescriptive criteria which will guide selection of appropriate management responses and actions. These prescriptive criteria should relate to a Fire Management Unit (FMU) and describe when fire can be utilized to gain resource benefits. This allows the manager to use a full range of appropriate management responses to deal with fire, which may involve suppression on part of a fire and allowing fire to play a natural role on another portion of the fire.
- If the CCP, HMP or FMP has not been through the NEPA process then the management response may only be suppression. If the CCP, HMP or FMP has been through the NEPA process but the prescriptive criteria do not provide adequate guidance to use a full range of options, then only prescribed fire operations and suppression responses may exist.

Having the full range of management options requires that there be upfront planning to guide the decision making when an incident occurs and there must be appropriate [prescriptive criteria](#) addressed. The prescriptive criteria must illustrate clearly what the range of appropriate management responses will be during the normal fire season for a specified Fire Management Unit (FMU) within the refuge or complex.

National Environmental Policy Act Compliance

As required by the National Environmental Policy Act (NEPA), the Fish and Wildlife Service has procedures for assessing environmental effects of specific Service actions. For actions not categorically excluded, an Environmental Assessment (EA), and if necessary, an Environmental Impact Statement (EIS), is prepared before making any land use decision, including fire management actions. See the Service NEPA guidance in 30 AM 2-3, 550 FW 1-3, and Departmental procedures in 516 DM 1-6; or consult with the Regional Environmental (NEPA) Coordinator for details on the NEPA process.

Departmental Categorical Exclusions are listed in 516 DM 2, Appendix 1. These are actions which do not individually or cumulatively have a significant effect on the environment. Additional Service categorical exclusions are also included in the Departmental Manual in 516 DM 6, Appendix 1. If exceptions to categorical exclusions apply, under 516 DM 2, Appendix 2, the Department or Service categorical exclusions cannot be used. Categorical exclusions which apply to the FWS wildland fire activities include:

- Personnel training, environmental interpretation, public safety efforts, and other educational activities, which do not involve new construction or major additions to existing facilities.
- Minor changes in existing master plans, comprehensive conservation plans, or operations, when no or minor effects are anticipated. Examples could include minor changes in the type and location of compatible public use activities and land management practices.
- The issuance of new or revised site, unit, or activity-specific management plans for public use, land use, or other management activities when only minor changes are planned. Examples include an amended public use plan or fire management plan.
- Fire management activities, including prevention and restoration measures, when conducted in accordance with Departmental and Service procedures.
- The use of prescribed burning for habitat improvement purposes, when conducted in accordance with local and State ordinances and laws.

Fire Management and Prescribed Fire Plans are operational plans and developed to implement land use decisions made in approved refuge Comprehensive Conservation and Habitat Management Plans. These "operational" fire management plans are usually categorically excluded from further NEPA analysis when:

- there is an approved Comprehensive Conservation or Habitat Management Plan that adequately addresses fire management activities,
- the plan has been through the NEPA process, and
- all prescribed burning is done for habitat improvement purposes.

If not, a Fire Management Plan EA is probably needed. Other environmental, social, legal, or political reasons may also justify a Fire Management Plan EA. The determination on whether a Fire Management Plan EA is needed is made at the field level with Regional Office consultation.

Other Legal Mandates

Other compliance requirements include Section 106 of the 1966 National Historic Preservation Act, Section 7 of the Endangered Species Act (as amended in 1973), Section 810 of the 1980 Alaska National Interest Land Conservation Act, and Section 118 of the Clean Air Act (as amended in 1990). Additional state and local compliance requirements may also exist.

Planning Review

To provide the necessary planning oversight, a formal plan review process is required. Plans generated by one level are reviewed by the next higher level (e.g., all refuge FMPs are reviewed and approved by the Regional Office). The review level is responsible for establishing the formal process for all fire management plans. Each Regional Office will establish a formal review and approval process: who provides biological, technical, policy, fiscal review and how that review takes place. Normally, at a minimum, FMPs will be reviewed by the Regional Fire Management Coordinator for concurrence and approved by the Regional Director. Refuges should review and/or revise FMPs at a minimum of 5-year intervals or when significant changes are proposed.

FMPs that do not described current or anticipated refuge conditions or operations should be revised as soon as possible. The degree current or anticipated refuge conditions or operations departs from that discussed in the refuge's approved FMP will dictate the magnitude of the revision needed. FMP revision procedures are the same as with other refuge step-down plans. All FMP revisions require Regional Office approval.

All new or previously developed Prescribed Fire Plans should be subject to the established regional review process during the scheduled year of implementation including a new signature page for previously developed plans. Prescribed Fire Plan review should be based on the prescribed fire complexity analysis. At a minimum:

- Low or moderate complexity prescribed fires should be reviewed by a NWCG Prescribed Fire Burn Boss Type 2.
- High complexity prescribed fires should be reviewed by a NWCG Prescribed Fire Burn Boss Type 1.
- For prescribed fires involving aviation operations, the appropriate NWCG Prescribed Fire Burn Boss reviewing the plan should also have prescribed fire operational aviation experience.

If the Prescribed Fire Plan was not developed by a currently qualified NWCG Prescribed Fire Burn Boss at the appropriate type, the technical review has to be by a currently qualified NWCG Prescribed Fire Burn Boss at the appropriate type. If the Prescribed Fire Plan was developed by a currently qualified NWCG Prescribed Fire Burn Boss at the appropriate type, the technical review can be by a previously qualified NWCG Prescribed Fire Burn Boss at the appropriate type.

Support plans, e.g., Dispatch, Step-up, Prevention, Monitoring, etc., will be reviewed annually to determine if revisions are required. Revisions to existing support plans that are significant in nature should be submitted to the Regional Office.

The Fire Management Branch will periodically review the Regional review process and approved refuge FMPs for policy compliance and Regional performance. A copy of the approved FMP and all subsequent amendments will be provided to the Fire Management Branch (supporting operational plans need not be included).

1.4.2 FIRE MANAGEMENT PLAN

Introduction

The procedures for developing FMPs and an outline of the contents are found in this section. A discussion of some of the individual subjects will be found in other identified sections of these guidelines.

Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans must be consistent with firefighter and public safety, values to be protected, and land, natural, and cultural resource management plans, and must address public health issues. Fire Management Plans must address all potential wildland fire occurrences and may include the full range of wildland fire management actions. Fire Management Plans must be coordinated, reviewed, and approved by responsible agency administrators to ensure consistency with approved land management plans.

If prescribed fire is to be used, it must be included as part of the FMP. An approved Prescribed Fire Plan is required for each prescribed fire. Plans can be utilized on a recurring basis as long as prescriptions remain valid or until new mandates dictate plan amendments. Prescribed Fire Plans must be developed with current and valid prescriptions. Regions will establish a process to delegate Prescribed Fire Plan approval to the responsible agency administrator. Each Prescribed Fire Plan requires a Regionally established review and concurrence process, to include the responsible Burn Boss and Regionally designated subject matter experts. All prescribed fires are subject to post-fire review.

An environmental assessment for the use of prescribed fire shall be prepared and submitted as part of the FMP for approval by the Regional Director unless this action is adequately discussed in the field office's current planning documents and the accompanying environmental document or the objectives and goals set for the field office or is covered under a categorical exclusion.

The Fire Management Plan is a strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. The plan is supplemented by operational procedures such as preparedness plans, pre-planned dispatch plans, prescribed fire plans and prevention plans.

Any unit without an approved Fire Management Plan has severely limited management options available. In these situations, units may only implement suppression strategies to manage wildland fires. Without an approved Fire Management Plan, no prescribed fire operations may be conducted on the unit.

The Fire Management Plan will be prepared by the Project Leader with assistance from the Fire Management Officer, field office staff, and other specialists; concurred with by the Regional Fire Management Coordinator; and approved by the Regional Director. Operational support plans, e.g., Dispatch, Prevention, Step-up, Pre-attack, etc., will be reviewed annually to determine if updates are required. Updates to existing plans that are significant in nature should be submitted to the Regional Office.

The Fire Management Plan may consist of several parts. As appropriate, the FMP will include sections on preparedness, prescribed and wildland fire operations, prevention, and detection. Where these areas are addressed within the FMP and complexity warrants, operational support plans covering these areas may be required to provide day-to-day operational guidance.

At a minimum each Refuge and Wetland Management District will complete the wildland fire section of the Fire Management Plan to assure that field office resources including staff, the general public, and private property receive adequate protection from wildland fires. A simple FMP describing wildland fire operations may be sufficient for small refuges, hatcheries, wildlife management areas, waterfowl production areas, and/or easement areas scattered among private lands, where local fire departments will suppress wildland fires in most cases.

The approved FMP becomes the authority for expenditure of fire management and resource management funds for prescribed fire.

Plan review and/or revision will take place at a minimum of 5 year intervals or when significant changes are proposed. When land use changes occur adjacent to Service lands, the plan will be reviewed to determine the need for revisions in fuels management or hazard reduction procedures.

FMPs must be guided by the overall resource management objectives for a refuge. The FMP must relate to the refuge Comprehensive Conservation Plan (CCP) and other step-down plans (i.e., Habitat Management Plan, Marsh and Water Management Plan, Forest Management Plan and Grassland Management Plan) and help achieve resource management objectives. Step-down plans may be the only source of guidance for development of the FMP but can provide at least a skeletal basis for plan development.

Refuges without CCP will have difficulty developing a FMP (i.e., new refuges, or refuges with dated plans). In lieu of a CCP, any approved planning document will be helpful in identifying where wildland fire should be excluded and included and should be used to develop FMPs. Fire management obligations begin as soon as the Fish and Wildlife Service takes title to lands and cannot be postponed. In many cases a FMP is needed before any management or step-down plan can be developed or updated. Under these conditions, the best fire management planning strategy can be achieved by addressing the components of fire management one step at a time. For example, a new refuge would develop an initial FMP that covers only suppression. After a couple of years of gathering fire history information, the plan would be updated to include more preparedness activities. Only after sufficient resource management planning has been completed would the FMP be updated to include the prescribed fire component.

A refuge with limited wildland fire activity that can be addressed by contracting all suppression services and does not plan to use fire to achieve land management objectives can develop a wildland fire suppression only FMP. A refuge that plans to use fire to achieve land management objectives, handles its own suppression activities, or provides assistance or support to a cooperator must develop a FMP that addresses all wildland fire management program components.

A refuge that uses wildland fire to achieve land management objectives (wildland fire use) must

include specific prescribed conditions in the FMP for the Fire Management Unit (FMU) (See Section 3.2.7). Prescriptive criteria that must be included covers quantifiable criteria as well as clearly written verbal guidance that states "given the following prescriptive criteria (conditions), the management response will be to suppress fires" or "to manage the fire to provide reduction of 50% of the current fuel load". In cases where expected fire effects cannot be tolerated, the appropriate management response will be suppression and no prescriptive factors are required.

Wildland Fire Use Prescriptive Criteria

Include environmental, geographic, administrative, and legal elements. Combinations of environmental conditions, fire behavior, fire locations, legal concerns, and management objectives must be considered and evaluated in defining the constraints and conditions under which a wildland fire may be allowed to achieve land management objectives. **If you are not using wildland fire to achieve land management objectives or if the FMP or the CCP do not meet NEPA compliance, prescriptive criteria is not required to guide management responses. You are limited to appropriate suppression responses.**

All wildland fires will have measurable prescriptive criteria for determining whether to suppress the fire or authorize another appropriate management response. These will be stated in the refuge FMP. They are selected to define conditions under which the wildland fire will achieve the objectives developed for each FMU and include provisions for public safety and the protection of property. They may vary from refuge to refuge and may be different between FMUs within a refuge.

The prescriptive criteria that must be addressed in the FMP are the following:

- Environmental and Fire Behavior.
- Environmental and fire behavior prescriptions may include all or any of the following specific ranges depending on need:
 - Temperature
 - Relative humidity
 - Wind speed
 - Wind direction
 - Fuel moisture
 - Ignition component
 - Probability of ignition
 - Flame length
 - Rate of spread
 - Smoke duration, direction of movement, and
 - Spotting distance
 - Other conditions as defined in the refuge Fire Management Plan
 - Prescriptions must include at least one indicator of drought, such as:
 - 1000 hour time lag fuel moisture content
 - Water level
 - Keetch-Byram Drought Index
 - Palmer Drought Index
 - Energy release component.
- Legal Limits. Each prescription must include elements which ensure compliance with legal limits and constraints. These may include, but are not limited to
 - Air quality laws
 - Threatened and endangered species protection
 - Mutual agreements and contingency plans
 - Cultural resources protection

- Geographic Limits. Spatial or geographic prescriptions must include the Maximum Manageable Area (MMA). These may include:
 - Acres (single or multiple fire acreage)
 - Perimeter
 - Percent of area, fire management unit, ecosystem or sensitive resource(s) burned
 - Operationally, the MMA of a fire should be defined and approved by the line officer in a manner similar to a suppression action. The ultimate MMA will be defined in the Interagency Wildland Fire Implementation Plan for the specific incident.
- Administrative. In addition to prescription elements which specify the size of the fire and its behavior and effects, the workload requirements imposed from the management of the fire must be defined and met. All positions (overhead, logistics, equipment or aircraft) which will be required to manage the fire, will be identified in the Incident Action Plan.

Prescriptive criteria must also include a written explanation of what the appropriate management response will be under these conditions so that a clear action can be determined. A clear communication of what will be done must exist to be a completed prescriptive condition.

Other operational plans may be necessary to fully implement the FMP. These may include one or more of the following and/or include other plans the refuge feels appropriate to its needs. Plans should be included in the Appendix section of the FMP:

- Refuge Preparedness Plan
- Per-attack Plan (Preplanned Dispatch)
- Step-up Plan
- Dispatch Plan
- Wildfire Prevention Plan
- Fire Rehabilitation Plan (include in FMP if a general plan for the refuge; individual operational plans should not be included in FMP.)
- Prescribed Fire Plan(s) (individual operational plans should not be included in FMP.)
- Monitoring Plan (include in FMP if a general plan for the refuge; individual operational plans should not be included in FMP.)

On July 11, 2002, the Wildland Fire Leadership Council [approved](#) the use of the Interagency Fire Management Plan Template for Fire Management Plan develop by all Department of the Interior bureaus and the U.S. Forest Service. [Exhibit 1-4-1](#) is the Template and a crosswalk guide between the old Fire Management Plan outline and the Template.

Sufficient detail is necessary to clearly communicate all refuge fire management activities. The author should keep in mind that he/she is not writing this plan for themselves but for the benefit of others that may have a need to know. The plan is also written for the next person that must deal with the fire program or for the next refuge manager that must administer the refuge. The amount of space devoted to individual sections will vary from each refuge. The sections that are important should receive appropriate attention, other sections or subparts that have less of an impact should be so identified. It is not necessary to repeat information or data that can be found in other refuge documents but these must be referenced or excerpts included in Appendix.

IF THE PLAN DOES NOT COMMUNICATE, THE PLAN IS INADEQUATE.

Other Operational Plans

Other operational plans may be needed to support the Fire Management Plan. The need for these plans are dependent on the management strategies developed in the Fire Management Plan. These other supporting plans may include the following, and may include other plans the refuge determines important:

- Prescribed Fire Plan format ([Exhibit 1-4-2](#))
- Sample Dispatch Plan ([Exhibit 1-4-3](#))
- Sample Step-up Plan ([Exhibit 1-4-4](#))
- Pre-attack Plan Checklist ([Exhibit 1-4-5](#))
- Burned Area Emergency Stabilization and Rehabilitation Plan ([Chapter 5](#))
- [Monitoring Plan](#)
- Wildfire Prevention Plan ([Exhibit 1-3-1](#))

1.4.3 REGIONAL FIRE DISPATCH PLAN

Each regional office will prepare a regional fire dispatch plan prior to the region's normal fire season. This plan is designed for large fire support and contains current information regarding personnel and equipment availability, duty contacts and a telephone listing of regional fire management personnel. Preparedness planning for the region will be included in this plan. A copy will be provided to the Service Fire Management Coordinator.

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Exhibit 1-4-1: Interagency Fire Management Plan Template

July 11, 2002 version

[Back](#)

Fire Management Plans identify and integrate all wildland fire management and related activities within the context of approved land management plans. Wildland fire management goals and components must be coordinated across administrative boundaries on a landscape basis. Bureau or agency fire management decisions must be consistent or compatible across administrative lines.

I. Introduction

The Introduction states the needs and reasons for developing the Fire Management Plan (Plan), that the Plan will help achieve the administrative unit's - Forest, Park, Refuge, Reservation, District, etc. (unit) - land and resource management objectives. It states how the Plan meets environmental and cultural compliances (e.g., NEPA, NHPA, ESA, etc.) and briefly describes compliance actions. It summarizes the collaborative processes used to develop the underlying land management plan direction and the fire management plan, as well as additional collaborative opportunities that will be available as the fire management plan is implemented. It also identifies the authority(ies) under which the Plan is developed.

II. Relationship to Land Management Planning/Fire Policy

The Land Management Planning/Fire Policy section references and cites agency management policies concerning fire management and relates the Plan to the enabling legislation and the purpose of the unit including a summary of the significant resources and values of the unit. It identifies in broad programmatic terms, the direction found in the land and resource management plans, such as goals, objectives, standards, guidelines, and/or desired future condition(s) as they pertain to fire management

III. Wildland Fire Management Strategies

A. General Management Considerations

This is a brief description to determine how wildland fire will be managed and identifies any area-wide considerations, such as interagency partnerships, regional strategies, collaborators, and collaborative processes to be incorporated in fire management strategies. The core principles of the 10 Year Comprehensive Strategy should be considered including collaboration, priority setting, and accountability.

B. Wildland Fire Management Goals

This is a list of the wildland fire management goals. These goals provide the programmatic direction for the wildland fire program. These goals should be stated in broad, programmatic terms, within the context of approved land management plan direction. Ideally these are found in approved land management plans. This section describes how the Fire Management Plan will safely and effectively contribute to achieving the goals in the unit's approved land and resource management plan.

It is identified here how these goals contribute to accomplishing regional or national strategic plans such as the 10 Year Comprehensive Strategy, National Fire Plan, or Cohesive Strategies, as well as wildland fire policy. Fire program goals reflect the core principles and goals of the Comprehensive Strategy and the Cohesive Strategy where supported by land and resource management plans.

C. Wildland Fire Management Options

This section briefly addresses the scope of wildland fire management program options that will be implemented within the administrative unit and further developed through the Fire Management Plan. It should include a brief and defensible rationale for all wildland fire management strategies that managers intend to apply in each FMU/FMZ. It may include the full range of options authorized under current policy, or a more limited range consistent with approved land management planning and resources to be protected.

D. Description of Wildland Fire Management Strategies by Fire Management Unit (Zone) (FMU/FMZ)

Identification of fire management units/zones and strategies within the units/zones is the cornerstone for planning the management of the wildland fire program. This section must tie directly to the decisions made in the land and resource management planning process by management area, aggregated into FMUs/FMZs. This section identifies objectives, standards, guidelines and/or future desired conditions within the FMU/FMZ and the wildland fire management strategies that will be used to accomplish them.

An FMU/FMZ is any land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, and so on, that set it apart from the management characteristics of an adjacent FMU/FMZ. The FMUs/FMZs may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The development of FMUs/FMZs should avoid redundancy. Each FMU/FMZ should be unique as evidenced by management strategies, objectives and attributes.

IV. Wildland Fire Management Program Components

Each Fire Management Plan is composed of the following wildland fire management components that define and document the unit's wildland fire program. Each of these components should be addressed in detail as it relates to the wildland fire management program described above in Section III. Although individual sub-elements of each of these components may differ from organization to organization, they should be addressed as needed either in this section, or a reference should be cited as to where this type of information can be found.

A. Wildland Fire Suppression

This section includes program direction for suppression actions taken on fires for which suppression is the appropriate management response (i.e., the fire is not being managed for resource benefits). A full range of suppression response is available consistent with objectives, constraints, or other direction for a Fire Management Unit. It would include program areas such as preparedness (including prevention and community education programs, community grant programs and assistance, training, qualifications, readiness, detection and aviation), initial attack, extended attack, and other management considerations (e.g. air quality).

B. Wildland Fire Use

This section includes direction for managing wildland fires for resource benefits. It includes direction for such things as decision criteria, implementation procedures, identifying objectives, constraints (air quality, etc.), required personnel, public interaction, and documentation and reporting requirements (e.g., costs).

C. Prescribed Fire

This section describes planning and implementation for prescribed fire. It includes direction for; annual activities for implementation, long term prescribed fire program, required qualified personnel, prescription requirements, prescribed fire plan requirements, air quality and smoke management, treatment maps, and documentation and reporting requirements, etc.

D. Non-Fire Fuel Applications

This section describes planning and implementation for non-fire fuel treatments. It includes direction for; annual activities for implementation, equipment and seasonal use restrictions, effects monitoring requirements, and reporting, documentation, etc.

E. Emergency Rehabilitation and Restoration

This section references post-fire emergency rehabilitation (stabilization) and restoration planning and implementation. Refer to the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook.

V. Organization and Budget

This section contains information pertaining to the wildland fire management organization and budget. It identifies the fire organization and budget needed to achieve the goals and objectives outlined in land and resource management plans and the fire management plan. It includes such things as the number, timing and location of the workforce and necessary equipment. The wildland fire management organization is normally based on analytical tools such as the Interagency Initial Attack Assessment (IIAA). This section identifies the budget level to support the fire management organization. It identifies both the desired and current fiscal year organization and budget levels if they are different. Contract resources, and supplemental and cooperative agreements should be identified and referenced here.

VI. Monitoring and Evaluation

This section outlines monitoring and evaluation requirements. It identifies components, procedures, time frames, responsibilities and reporting requirements for monitoring and evaluating whether the FMP is being implemented as planned and whether fire-related goal and objectives are being achieved. Information obtained from monitoring and evaluations is used to update the FMP as well as land use plans.

Monitoring and reporting of national wildland fire performance measures will also be addressed.

Glossary

Appendix

Crosswalk Guide Between Old Fire Management Plan Outline and the Interagency Fire Management Plan Template

OLD FIRE MANAGEMENT PLAN OUTLINE	INTERAGENCY FIRE MANAGEMENT PLAN TEMPLATE
<p>1. INTRODUCTION</p> <p>1. The introduction should be a narrative which describes the resource objectives which will be met by the FMP; there should be an indication of compliance with NEPA or NHPA. The plan can be related to the enabling legislation, the purpose of the refuge, values to be protected, managed or at risk (describe cultural and historical sites, T&E species, critical habitats, refuge facilities, and private property) that may be threatened from a fire on refuge property in general terms.</p>	<p>I. Introduction</p>
<p>2. The objectives of the refuge's Master or Comprehensive Conservation Plan should be stated as they pertain to the Fire Management Plan. If no Master or Management Plan exists, so state and list objectives from the refuge's operational plan (Marsh and Water Management Plan, Forest Management Plan, Grassland Management Plan, etc.) as they pertain to the Fire Management Plan. List the fire management objectives as derived from the Master or Comprehensive Conservation Plan for the refuge. These objectives may run from broad to the specific but should illustrate what is to be accomplished by the fire management program. Some examples of broad to specific objectives:</p> <ol style="list-style-type: none"> 1. Protect life, property, and other resources from unwanted fire. 2. Use fire to accomplish resource management objectives. 3. Restore fire as a natural ecological process. 4. Develop and implement a process to ensure the collection, analysis and application of high quality fire management information needed for sound management decisions. 5. Restore and perpetuate native wildlife species by maintaining a diversity of plant communities. 6. Maintain natural fire as a dynamic ecosystem process to the maximum extent feasible. 7. Remove ladder fuels through successive low intensity management ignited understory burning until fuel loads represent natural levels. 	<p>II. Relationship to Land Management Planning/Fire Policy</p>
<p>3. Describe in general the composition of the station or complex fire management organization and position responsibilities for both suppression and prescribed fire. (Individual names and qualifications should be listed only in the Dispatch Plan in the Appendix so changes can be made without impacting the entire FMP)</p>	<p>V. Organization and Budget</p>
<p>4. List key interagency contacts by function and include copies of agreements as an appendix. (The contact name, location, alternate persons, telephone numbers for inter and intra-agency activities should be in descending order of contact priority and listed in the Dispatch Plan.)</p>	<p>Appendix</p>

<p>5. Describe the strategies selected to implement fire management objectives. Identify constraints which could impact strategies such as, but not limited to, impacts on wilderness or proposed wilderness; endangered species; cultural resources; air quality and smoke management; seasonal influences, etc. Justification for strategies that may not be obvious to the reader should be briefly explained. Strategies that are selected should take advantage of the 2001 Federal Wildland Fire Policy and should reflect that language. For example:</p> <ol style="list-style-type: none"> 1. Wildland fires will be controlled using the appropriate management strategy. 2. Wildland fires will be managed within prescriptive criteria established otherwise the fire will be treated as an unwanted wildland fire. 3. Fire adapted communities that have not had a significant fire for more than twice the normal fire frequency for that community type may be undergoing change in community structure and function. Depending upon other consideration, prescribed fire should be reintroduced into these communities if the reintroduction is consistent with land use objectives established for the communities. 4. No use of retardant in areas under consideration for wilderness, except in life-threatening situations, without the express approval of the refuge manager. 5. No use of mechanical equipment in cultural areas without the area first being examined by an archeologist. 	<p>III. Wildland Fire Management Strategies</p>
<p>2. DESCRIPTION OF REFUGE (if not covered in the refuge's Master or Comprehensive Conservation Plan)</p> <ol style="list-style-type: none"> 1. This is a narrative description about the refuge including topography, climate, vegetative communities of significance, wildlife resources, water resources, threatened and endangered species, cultural resources, air quality concerns, soils , facilities, social-political-economic concerns, neighboring landowners. 2. Briefly provide general fire ecology information on the refuge including any historic or current fire regime information; information on fire weather and season(s), fuel types and fire behavior characteristics; the effect that fire has on species of plants or wildlife of concern, effects to other resources such as air, vegetation communities, water, or political impacts to the refuge. Some of this may be covered in general terms here with greater detail in the Fire Management Unit (FMU) section. 	<p>II. Relationship to Land Management Planning/Fire Policy (if not adequately cover in the refuge's Comprehensive Conservation Plan or step-down plans)</p>
<p>3. WILDLAND FIRE MANAGEMENT PROGRAM - The Wildland Fire Management Program consists of preparedness, prescribed fire and wildland fire where fire is used to achieve resource objectives. The Fire Management Plan covers all aspects of the program looking at general preparedness for the refuge or complex and then focusing on wildland and prescribed fire aspects of the program.</p>	<p>IV. Wildland Fire Management Program Components</p>
<p>1. PREPAREDNESS</p> <ol style="list-style-type: none"> 1. Describe the fire season and range of potential fire behavior as it relates to fire protection and prevention by fuel types, historic weather patterns, drought etc. Where appropriate, include flame length, rate of spread, burning index, and energy release component by month and season. 2. Describe the work needed annually to ensure fire readiness of personnel, equipment and supplies. Detailed training needs by individual should not be identified within the FMP but should be developed each year based on personnel needs. Detail when cache equipment is readied, who does it, what firebreaks are to be put in, including a description of the type of firebreak to be used, etc. 3. Step-up Plans should be referenced here to ensure an understanding of when to implement and what the plan means. 4. Effect of Regional or national preparedness level on refuge activities. 5. Pre-attack plans should be referenced here to ensure an understanding of when to implement and what the plan means. 6. Rehabilitation preplanning, if done, should be referenced here to ensure an understanding of when to implement and what the plan means. 	<p>IV.A. Wildland Fire Suppression</p>

<p>2. PRESCRIBED FIRE</p> <ol style="list-style-type: none"> 1. Describe long-term prescribed burn program necessary to achieve management objectives. If all or part (give percentage) of a burn supports the recovery of a threatened or endangered species, discuss this part of the program and reference the specific fire management unit(s). 2. Describe general plan for prescribed burning program, including annual activities to prepare for and implement the program including training. Do not include copies of Prescribed Fire Plans or prescription elements. Discussing prescription elements in the Fire Management Plan is no longer an option; they must be specifically defined in each Prescribed Fire Plan. 3. Correlate with strategy and objectives sections. Define the normal prescribed fire burning seasons; and are they normal or bimodal (two periods per year)? 4. Identify the fire behavior and fire effects monitoring requirements. Include short and long-term appraisals. Emphasize measurements and/or evaluations needed to determine if objectives have been met. 5. Discuss the complexity of the prescribed fire program (the NWCG Prescribed Fire Complexity Rating System Guide could be useful). This analysis should discuss factors such as fuel types, smoke management, type of burn, size of burn, fire behavior, number of burns being executed during the same time, public and political feeling. 6. Discuss potential impacts of the plan implementation (visitors, users, and local communities), both on and off site. Include environmental, sociological, and economic impacts, and discussion of what impacts may be unacceptable and how to mitigate them. 7. Provide format for critiques of prescribed burn operations. 	<p>IV. C. Prescribed Fire</p>
<p>3. WILDLAND FIRE</p> <ol style="list-style-type: none"> 1. FIRE MANAGEMENT UNITS (FMUs) - FMUs are areas on a refuge which may have common wildland fire management objectives and strategies; are manageable units from only a wildland fire standpoint; can be based on natural or manmade fuel breaks. An FMU should not be confused with a prescribed fire burn block or treatment area or unit. On smaller refuges the whole refuge may be treated as a single FMU. Generally, the narrative write-up for an FMU should explain how wildland fire operations will be handled within that FMU. Any operational question that a wildland fire specialist might have should be answered within the FMU narrative. The FMU narrative could serve as the basis for a briefing for an Incident Management Team. The detail of explanation and types of information presented will depend on the wildland fire objectives for the unit but some examples of items to include : <ol style="list-style-type: none"> 1. Fuel types (FBPS and NFDRS). Identify important or indicator species that are benefited or harmed by fire. (If covered under Refuge Description so note). 2. Fire behavior by fuel types in each of the "normal" and "extreme" fire years. (Normal and extreme should be defined by 100 or 1,000-hour time lag fuel moisture, BI, ERC, Keetch-Byram drought index, etc.) (If covered under Refuge Description so note). 3. Fire effects by fuel types under various conditions of fuels, weather, soil and other influential variables. (4) Annual fire weather cycle, including extremes. 4. Restrictions on uses of retardants/foams, mechanical equipment or other activities that may not be permitted. 	<p>III. D. Description of Wildland Fire Management Strategies by Fire Management Unit (Zones) (FMU/FMZ)</p>

<p>2. Identify the process for determining when and where a wildland fire will be used to achieve resource management objectives. Prescriptive criteria must be established for any use of wildland fire to achieve resource management objectives for each FMU. Prescriptive criteria define the conditions under which the wildland fire will achieve the objectives developed and include provision for public safety and the protection of property. (See discussion on prescriptive criteria at the beginning of this section). The appropriate management response will be described in detail. Identify the conditions when the appropriate management response is "unsuccessful", thereby necessitating the use of the Wildland Fire Situation Analysis.</p>	IV. B. Wildland Fire Use
<p>3. If the use of wildland fire to achieve resource management objectives is not appropriate, then suppression objectives will be identified for each FMU. If suppression objectives are to be implemented, then a discussion of how initial attack is to be conducted; transition from initial attack to extended attack, and further transitions will be included. If initial actions are not successful, the Wildland Fire Situation Analysis will be used to plan further actions.</p> <p>4. Wildland Fire Situation Analysis: Specify daily preparation or revalidation to derive fire potential probable growth, and suppression resources that would be needed to make an appropriate management response if the fire were to be declared an unplanned and unwanted wildland fire. Document actions needed to protect special resources (natural and cultural) and provide for the public safety.</p>	IV. 4. Wildland Fire Suppression
<p>4. AIR QUALITY / SMOKE MANAGEMENT CONCERNS - Any requirements in the State Implementation Plan which may have an impact on the refuge should be discussed. (See Section 2.3.1-5).</p>	IV. A-E. as appropriate per section
<p>5. PUBLIC INFORMATION AND EDUCATION - Any activities conducted by the Fire Management Program which can have a negative impact on the public should be addressed along with mitigating actions. Any educational programs that the Program may support should be briefly described. The refuge may add to the FMP outline as deemed necessary in order to provide a complete picture of the Fire Management Program.</p>	IV. A-E. as appropriate per section
<p>6. APPENDICES</p> <p>1. Normal Unit Strength (NUS) inventory (should include items normally stocked in fire cache to support wildland and prescribed fire operations including engines and other equipment supported by FIREBASE funding)</p> <p>3. Refuge planning documents cited</p> <p>4. Cooperative agreements</p> <p>5. Additional fire management plans needed to fully execute the Fire Management Plan as well as a listing of tables, charts or maps may be included as appropriate.</p>	Appendix
<p>2. Definitions if needed to describe refuge specific operations</p>	Glossary



MEMORANDUM

JUL 11 2002

To: All Agency Offices

From: Chief, USDA Forest Service
Assistant Secretary, Indian Affairs
Director, Bureau of Land Management
Director, Fish and Wildlife Service
Director, National Park Service

Subject: Interagency Fire Management Plan Template

An interagency fire management planning working group has developed a single, landscape scale, interagency Fire Management Plan template. This template is consistent with the policies and actions in the *Federal Wildland Fire Management Policy* and the *10-Year Comprehensive Strategy*. This interagency template was reviewed and recommended for approval by the respective agency Fire Directors on May 14, 2002.

We concur with the Fire Directors' recommendation and direct our respective agencies to implement the attached Interagency Fire Management Plan Template.

Chief, USDA Forest Service

Assistant Secretary, Indian Affairs

Director, Bureau of Land Management

Director, Fish and Wildlife Service

Director, National Park Service

Attachment: Interagency Fire Plan Template



**Exhibit 1-4-2: PRESCRIBED FIRE PLAN FORMAT****COVER PAGE**
[Back](#)

Refuge or Station	
Unit	
Prepared By: Prescribed Fire Planner	Date:
Reviewed By: Refuge Manager	Date:
Reviewed By: Prescribed Fire Burn Boss	Date:
Reviewed By: Regional Fire Management Coordinator	Date:
Reviewed By: (Others)	Date:

The approved Prescribed Fire Plan constitutes the authority to burn, pending approval of Section 7 Consultations, Environmental Assessments or other required documents. No one has the authority to burn without an approved plan or in a manner not in compliance with the approved plan. Prescribed burning conditions established in the plan are firm limits. Actions taken in compliance with the approved Prescribed Fire Plan will be fully supported, but personnel will be held accountable for actions taken which are not in compliance with the approved plan.

Approved By:	Date:
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PRESCRIBED FIRE PLAN

Refuge:		Refuge Burn Number:	
Sub Station:		Fire Number:	
Name of Area:		Unit No.	
Acres To Be Burned:		Perimeter Of Burn:	
Legal Description:	Lat.	Long.	T R S
County:			

Is a Section 7 Consultation being forwarded to Fish and Wildlife Enhancement for review ? Yes No (circle).

(Page 2 of this PFP should be a refuge base map showing the location of the burn on Fish and Wildlife Service land)

The Prescribed Fire Burn Boss/Specialist must participate in the development of this plan.

I. GENERAL DESCRIPTION OF BURN UNIT

Physical Features and Vegetation Cover Types (Species, height, density, etc.):

Primary Resource Objectives of Unit (Be specific. These are management goals):

- 1.
- 2.
- 3.
- 4.

Objectives of Fire (Be specific. These are different than management goals):

- 1.
- 2.
- 3.
- 4.

Acceptable Range of Results (Area burned vs. unburned, scorch height, percent kill of a species, range of litter removed, etc.):

- 1.
- 2.
- 3.
- 4.

II. PRE-BURN MONITORING

Vegetation Type	Acres	%	FBPS Fuel Model

Habitat Conditions (Identify with transect numbers if more than one in burn unit.):

Type of Transects:

Photo Documentation (Add enough spaces here to put a pre-burn photo showing the habitat condition or problem you are using fire to change/correct. A photo along your transect may reflect your transect data.):

Other:

III. PLANNING AND ACTIONS

Complexity Analysis Results:

Site preparation (What, when, who & how. Should be done with Burn Boss):

Weather information required (who, what, when, where, how, and how much):

Safety considerations and protection of sensitive features (Adjacent lands, visitors, facilities, terrain, etc., and needed actions. Include buffer and safety zones. Be specific, indicate on a burn unit map. Map should be a USGS quadrangle if possible, so ridges, washes, water, trails, etc. can be identified.)

Special Safety Precautions Needing Attention (Aerial ignition, aircraft, ignition from boat, etc.):

Media Contacts (Radio stations, newspaper, etc., list with telephone numbers):

Special Constraints and Considerations (Should be discussed with Burn Boss):

Communication and Coordination on the Burn (Who will have radios, frequencies to be used, who will coordinate various activities.):

IV. IGNITION, BURNING AND CONTROL

Scheduling	Planned or Proposed	Actual
Approx. Date(s)		
Time of Day		

Acceptable Range of Prescription Elements - Complete for Each Applicable Fuel Model

BEHAVE Fuel Model:	Low	High	Actual
Temperature			
Relative Humidity			
Wind Speed (20' forecast)			
Wind Speed (mid-flame)			
Cloud Cover (%)			

Wind Direction	Between:
ENVIRONMENTAL CONDITIONS	
Soil Moisture	
1 hr. Fuel Moisture	
10 hr. FM	
100 hr. FM	
Woody Live Fuel Moisture	
Herb. Live Fuel Moisture	
Litter/Duff Moisture	
FIRE BEHAVIOR	
Type of Fire (H,B,F)	
Rate of Spread	
Fireline Intensity	
Flame Length	
Energy Release Component NFDRS Fuel Model Used:	

Cumulative effects of weather and drought on fire behavior:

Ignition Technique (Explain and include on map of burn unit. Use of aerial ignition must be identified in this plan. Last minute changes to use aircraft will not be allowed and will be considered a major change to the plan. This will require a resubmission):

Prescribed Fire Organization (See Section VII, Crew and Equipment Assignments. All personnel and their assignments must be listed. All personnel must be qualified for the positions they will fill.)

Other (If portions of the burn unit must be burnt under conditions slightly different than stated above, i.e., a different wind direction to keep smoke off of a highway or off of the neighbors wash, detail here.)

Prescription monitoring (Discuss monitoring procedure and frequency to determine if conditions for the burn are within prescription):

V. SMOKE MANAGEMENT

- Make any Smoke Management Plan an attachment.
- Permits required (who, when):
- Distance and Direction from Smoke Sensitive Area(s):
- Necessary Transport Wind Direction, Speed and Mixing Height (Explain how this information will be obtained and used):
- Visibility Hazard(s) (Roads, airports, etc.):
- Actions to Reduce Visibility Hazard(s):

- Residual Smoke Problems (Measures to reduce problem, i.e., rapid and complete mop-up, mop-up of certain fuels, specific fuel moistures, time of day, etc.):
 - Particulate emissions in Tons/Acre and how calculated
-
- Estimated before the burn:
 - Actual after the burn:

VI. FUNDING AND PERSONNEL

Activity Code:

Costs

	Equipment & Supplies	Labor	Overtime	Staff Days
Administration (planning, permits, etc.)				
Site Preparation Ignition & Control				
Travel/Per Diem				
Total				

VII. BURN-DAY ACTIVITIES

Public/Media Contacts on Burn Day (List with telephone numbers):

Crew & Equipment Assignments (List all personnel, equipment needed, and assignments. The following is not an all inclusive list for what you may need.)

- Burn Boss/Manager -
- Ignition Specialist -
- Ignition Crew -
- Holding Specialist -
- Holding Crew -
- Aircraft Manager -
- FWBS -
- Dispatcher-
- Other -

Crew Briefing Points (Communications, hazards, equipment, water sources, escape fire actions, etc. To be done by Burn Boss. Refer to Safety Considerations in Planning Actions and points listed below):

Ignition Technique (Methods, how, where, who, and sequence. Go over what was submitted in Section IV and any changes needed for the present conditions.) Attach ignition sequencing map if necessary:

Personnel Escape Plan:

Special Safety Requirements:

Go-No-Go Checklist:

Holding and Control:

- Critical Control Problems:
- Water Refill Points:
- Other:

Contingency Plan:

- Holding Plan Failure (Are there dedicated crews standing by to initial attack or will people doing other jobs be called upon to do initial attack, who must be called in case of an escape, what radio frequencies will be used, etc.)
 - Initial Escape
 - Escape Exceeding 1 Burning Period:
- Smoke Management Plan Failure
- Fire Behavior Outside Prescription
- Other

Mop Up and Patrol:

- Resources needed
- Duration

Rehabilitation Needs:

DI 1202 Submission Date:

Special Problems:

VIII. CRITIQUE OF BURN

Were burn objectives within acceptable range of results? (Refer to Section I):

What would be done differently to obtain results or get better results?

Was there any deviation from plan? If so, why?

Problems and general comments:

IX. POST-BURN MONITORING

Date: Refuge Burn Number:

Length of Time after Burn:

Vegetative Transects:

Comments on Habitat Conditions, etc.:

Photo Documentation:

Other:

X. FOLLOW-UP EVALUATION

Date: Refuge Burn Number:

Length of Time after Burn:

Vegetative Transects:

Comments on Habitat Conditions, etc.:

Photo Documentation:

Other:

**Exhibit 1-4-3: COOT CREEK NWR SAMPLE DISPATCH PLAN**

When report of smoke or fire is received get as much information as possible from the caller. The following list should be filled in.

[Back](#)

- Location of smoke or fire:
- Location of caller:
- Name and telephone number of caller:
- Color of smoke:
- Size of fire:
- Type of Fuel:
- Character of fire (running, creeping, etc.):
- Anyone on the fire:
- See anyone in the area or vehicles leaving the area:

DISPATCH CHECK LIST

1. Check map location and ownership/protection status.
2. If fire is on or threatening refuge dispatch small (200 gal.) pumper and three qualified staff.
3. Notify refuge manager
4. Notify State Forest Office Phone 702-6117 (George in dispatch)
5. If fire danger very high or extreme, put reconnaissance aircraft over the fire. Carded aircraft:
 1. Beach Aircraft 878-9801
 1. Cessna 185 \$36.00/hr.
 2. Supercub \$30.00/hr.
 2. Tico Aviation 433-0041
 1. Twin Beech \$75.00/hr
6. Maintain log of all radio and telephone communications.
7. Remain on duty and dispatch further assistance as ordered from the fire.

SUPPORT ITEMS

- Barry Smith, Mgr.
- Gary Small, Supt.
- Forest Papers Inc. 703-1112
- Adjacent landowners:

REFUGE PERSONNEL

Name	Qualification	Home Phone Number
Sally Johnson	ICT III	702-1987
Liz Ossa	Task Force Leader	702-9432
Jim Stone	Crew Boss	702-7125
Barney Smith	Engine Operator	702-2987
Wayne Dial	Firefighter	703-4569
Mary Dieke	Firefighter	702-2654
Jack Jones	Dispatcher	703-9140

DIRECTORY

- Office (213) 575-3387
- Home (213) 987-1256
- Office (213) 575-9300
- Office (208) 389-2595
- Home (208) 999-1234
- Logistics Support (208) 389-2400
- Coldfeet District Forester Office 702-6117
- John Dean, Forester Home 702-3456

- Fuel Stop 703-6231
- Flats Oil Co. 702-9191
- Gasoline
- 2 Type 3 engines
- 1 Type 4 engine
- 1 5,000 gal. tanker
- 1 D-6 w/fireplow
- 1 Transport
- Engines
- 1 D-6 w/blade
- 2 D-4 w/blade
- 2 Transports
- Tractors
- CL-215 1,000 gal.
- B-26 1,200 gal.
- Aerial Tanker
- Coldfeet District (State) 702-6117
- Regional Fire Mgt. Coordinator


[Back](#)
Exhibit 1-4-4: COOT CREEK NWR SAMPLE STEP-UP PLAN

Staffing Class	Burning Index	Step-Up Action
1	0-11	Fire danger rating signs at visitor concentration areas activated at start of fire season. Normal tours of duty and normal numbers of initial attack/monitor personnel will be available.
2	12-22	Same as SC-1.
3	23-55	<p>All fire equipment use for project work will be brought in at the end of each day and maintained in a fire ready condition.</p> <p>In addition to SC-1. If predicted or observed lightning activity level (LAL) is 4, 5, or 6, automatically move up to SC-4.</p> <p>If a high visitation period has been determined to pose exceptional human caused risk of wildland fire, move to SC-4 (e.g. historic records of a specific three-day holiday weekend, opening days of hunting seasons on adjacent lands producing additional human caused fires).</p> <p>If live and/or dead fuel moistures are sufficiently low (e.g. live fuel moisture in sagebrush of 90%, 100 HR TL FM 7%, 1000 HR TL FM 9%) to allow rapid fire spread or high fire intensity in the presence of wind, step-up may be moved to SC-4. This section is included because wind velocities often increase in late afternoon after NFDRS indices have been obtained for the day.</p>
4	56-71	<p>All fire equipment will be kept in a fire ready condition and positioned appropriately. No fire equipment will be used for project work.</p> <p>If the LAL is between 3 and 6, a fixed wing detection overflight may be requested from an adjacent cooperator. If cooperating aircraft are not available, a fixed wing aircraft may be hired for a detection flight. Cooperators and the RFMC will be advised of these situations daily.</p> <p>The normal tour of duty for fire lookouts will ordinarily be staggered, with one lookout staffed from 0800 to 1630 and the other staffed from 0930 to 1800. Tours of duty will be extended through the burning period and/or during distinct evening and nighttime periods when the observed LAL is 3 or greater or when observations suggest the likelihood of LAL between 3 and 6. If these LAL levels occur during the night, the lookouts should begin detection efforts by 0800 the next morning.</p> <p>Intensified road and campground patrols for prevention and detection purposes may be initiated. Inter-agency detection and suppression efforts will be coordinated by the FMO.</p> <p>In these situations, the initial continued attack/monitoring crew will consist of a minimum of two people, one of whom should be qualified as either a fire monitor or a Type IV incident commander, and will be held on duty through the burning period. The standby team in any SC-4 incident should be stationed in the area where risk is considered highest. Other initial attack/monitoring teams may be held on standby in other areas if conditions warrant.</p> <p>Key seasonal personnel will be identified by name and position and evaluated for fire experience after the area's full complement of initial attack/monitoring personnel has been hired.</p> <p>Workweeks and/or daily tours of duty for regular initial attack/monitoring personnel may be expanded, particularly when the observed LAL is between 3 and 6, the predicted LAL is from 4 to 6, and/or the human caused risk is exceptionally high (MR=80).</p> <p>Backcountry permits may be amended to prohibit open fires.</p>

5	72+	<p>All SC-4 actions with further constraints noted below.</p> <p>Tours of duty for fire lookouts will be extended through the burning period and/or during distinct evening and nighttime periods when the observed or predicted LAL is 3 or greater.</p> <p>Workweeks and/or daily tours of duty for regular initial attack/monitoring personnel and key permanent personnel may be expanded, particularly when predicted or observed LAL is between 3 and 6 and/or human caused risk is exceptionally high (MR=80).</p> <p>In these situations, the initial attack/monitoring team will, if possible, consist of a minimum of three qualified people, and will be held on duty through the burning period.</p> <p>The main standby initial attack/monitoring team in any SC-5 incident should be in the area where risk is considered highest. Initial attack/monitoring teams may be held on standby in other areas if conditions warrant.</p> <p>Temporary closures may be imposed on areas in the refuge or for certain activities (e.g. open fires) in conjunction with similar impositions by adjacent land managing agencies.</p>
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Exhibit 1-4-5: PRE-ATTACK PLAN CHECKLIST



[Back](#)

<p>COMMAND</p> <p>Pre-attack WFS (if appropriate)</p> <p>Pre-positioning needs</p> <p>Draft delegations of authority</p> <p>Management constraints</p> <p>Interagency agreements</p> <p>Evacuation procedures</p> <p>Structural protection needs</p> <p>Refuge Closure procedures</p>	<p>PLANNING</p> <p>Refuge base map</p> <p>Topographic map</p> <p>Infrared imagery</p> <p>Vegetation/fuel maps</p> <p>Hazard locations (ground and aerial)</p> <p>Archeological/cultural base map</p> <p>Endangered species critical habitats</p> <p>Sensitive plant populations</p> <p>Special visitor use areas</p> <p>Land status</p>
<p>OPERATIONS</p> <p>Helispot, helibase locations</p> <p>Flight routes, restriction, hazard areas</p> <p>Water sources</p> <p>Control line locations</p> <p>Natural barriers</p> <p>Safety zones</p> <p>Staging area location</p>	<p>LOGISTICS</p> <p>ICP, base, camp locations</p> <p>Roads, trails (including limitations)</p> <p>Utilities</p> <p>Medical facilities</p> <p>Stores, restaurants, service stations</p> <p>Transportation resources, locations and aerial</p> <p>Rental equipment sources (by type)</p> <p>Construction contractors</p> <p>Sanitary facilities</p> <p>Police, fire departments</p> <p>Communications (radio, telephone)</p> <p>Sanitary landfills</p> <p>Potable water sources</p> <p>Maintenance facilities</p> <p>Media contacts and location for information office</p>



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Personnel\]](#) [\[Safety Operations\]](#) [\[Equipment\]](#) [\[Structural Firefight.\]](#)



1.5 TRAINING, QUALIFICATIONS AND CERTIFICATION

1.5.1 PERSONNEL

Introduction

Modern fire management is a highly technical and professional operation requiring skilled, knowledgeable employees to meet Fish and Wildlife Service program objectives. **Individuals will not be assigned to duties for which they lack training and qualification.**

Departmental policy requires all personnel engaged in interagency wildland fire and/or prescribed fire operations to meet or exceed standards set by the National Wildfire Coordinating Group (NWCG). The Fish and Wildlife Service accepts NWCG standards for interagency operations. All employees, permanent, seasonal, and temporary will be qualified within the NWCG system for the interagency position assigned, unless assigned as trainees. **All personnel funded with fire funds who are hired under a position description containing firefighting duties will also meet PMS 310-1 requirements for the appropriate fire position.** Agency qualifications for positions not covered by NWCG standards are included in Agency Determined Skill Levels.

Management at all Fish and Wildlife Service levels should recognize that employees trained and experienced in fire management possess skills which contribute to quality performance in other job areas. Many of these employees receive supervision and management training as part of the wildland fire and prescribed fire curriculum. Those skills are equally applicable to management of other types of incidents, and to routine supervisory and managerial duties (e.g., maintenance, interpretation, administration, resource management among others). Simply stated, the benefits accrued by developing these skills are well worth investments of time and fiscal resources.

Program Administration

Fish and Wildlife Service fire management training is based upon criteria specified within the interagency wildland fire and prescribed fire training curriculum approved by NWCG. This curriculum is supportive of positions described within the Wildland and Prescribed Fire Qualification System Guide, PMS 310-1 (310-1). Position performance requirements are outlined in individual position task books (PTB's) for each position.

Additional fire management training which is deemed necessary to improve employee proficiency but is not addressed within the NWCG curriculum will generally continue to be developed at the Regional or National level. This training often addresses an agency-specific need or is targeted toward the development of skills for positions which have not yet been adopted by NWCG.

Training needs analyses are developed each year at refuge, regional and national levels. The assessment process provides information needed to determine which courses will be required, which employees will attend them, and how many slots will be available. Courses should be based upon identified refuge needs, and reflect goals established in individual employee development plans.

Generally, the refuge or region is responsible for sponsoring 100 and 200 level courses. It is highly recommended that all training, regardless of level, be presented by interagency instructors to interagency audiences.

Intermediate level (300 and 400) training needs are determined by the Regional Fire Management Coordinator (RFMC). Each RFMC is a member of his/her regional interagency training committee. These committees identify priority intermediate level training needs and designate host agencies and course coordinators. The RFMC identifies Fish and Wildlife Service personnel requiring intermediate training and ensures that those employees receive this training.

National level (500 and 600) training needs are determined by the Fire Management Branch. All national level training will be based upon a position needs analysis.

Fire Management Curriculum

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Personnel](#)

[Safety Operations](#)

[Equipment](#)

[Structural Firefight.](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

The curriculum supporting fire management qualifications and position certification is explained in detail in the PMS 310-1. Details relating to course descriptions and trainee/instructor qualifications are provided in the NWCG Field Manager's Course Guide, PMS 901-1 (NFES 2194).

Training Development Process

Needs for the development of new training, or the revision of existing materials should be routed to Regional Fire Management Coordinators. Fish and Wildlife Service development needs are prioritized by Regional Fire Management Coordinators and the Branch Training Specialist.

Training Nomination Process

Employees identified for national level training will be nominated by their respective Regional Fire Management Coordinator. Nominations will be forwarded to the Fire Management Branch in priority order. The Fire Management Branch will establish national priorities.

Regional nominations should be consistent with regional or geographic board direction. Such consistency should be indicated on the nomination in order to assist the Branch in establishing national priorities. This process ensures both regional and national training/overhead development objectives are met, and provides a means for the nationwide tracking of qualified people.

Nominations for intermediate level courses should be routed to Regional Fire Management Coordinators for prioritization. Each Regional Fire Management Coordinator should develop written guidelines clarifying this process for their region.

The Interagency Training Nomination Form, available electronically on the internet, should be utilized for nominating employees to all levels of wildland and prescribed fire training.

Fire Management Instructor Program

Each Region is responsible for the selection, training, and certification of an adequate number of Fish and Wildlife Service instructors for fire management training.

NWCG recognizes two levels of wildland fire instructor: lead instructor (Type I) and unit instructor (Type II). A lead instructor must have sufficient experience in presenting all units of the course so as to be capable of last minute substitution for unit instructors. It is recognized that some courses may contain material of a highly technical nature and no one person may be technically competent in all areas. Lead instructors must also be minimally position qualified at the next higher job level (e.g., a Lead Instructor for S-230 "Single Resource Boss-Crew" must minimally be qualified as a Strike Team Leader-Crew).

Unit instructors must be experienced in the lesson content they are presenting. Unit instructors must be minimally position qualified at the job level to which the training course is targeted.

All 100 level courses may be taught by anyone having the requisite experience who is approved by the local fire management staff. No instructor training requirements exist for either lead or unit instructors for 100 level courses.

Unit instructors participating in 200 level training should attend an instructor course of at least 32 hours that emphasizes adult education skills.

Lead instructors for 200 level training courses and all instructors of 300 level and above courses are required to have instructor training as described above.

The Facilitative Instructor, FLETC Instructor, and collegiate level adult education courses are representative of adult education programs meeting instructor training requirements. Exceptions may be made for those instructors who have demonstrated strong instructional skills and abilities. Certification of instructors is generally the responsibility of lead instructors, not of managers or supervisors. However, Regional Fire Management Coordinators may occasionally designate and certify both levels of instructors based upon personal knowledge of skills and instructional abilities.

The NWCG Course Coordinator's Guide, PMS 907 (NFES 2226), defines instructional responsibilities in the form of a checklist of duties for each of the three major roles involved in course presentation.

Training Certification Process

Each course lead instructor provides successful trainees with certificates of completion upon conclusion of the course. The instructor also ensures that appropriate training completion data is relayed to Regional Fire Management Coordinators/and or refuge Fire Management Officers to enter into the Fish and Wildlife Service Fire Management Information System.

National level training courses (500 level and above, e.g., S-590; I-520/620) require entry of training completion dates by the Fire Management Branch. Successful trainees should forward a copy of their certificates to the Regional Fire Management Coordinator for computerized entry by the Fire Management Branch.

In general, training materials are not be available from the Fire Management Branch. Refuges will request funds for training materials in their annual funding requests, and regions will request funds for instructors and training materials needed to support their refuges.

All NWCG-approved training packages and course materials are readily available through the Publications Management System at the National Interagency Fire Center. NWCG [National Fire Equipment System Catalog Part 2: Publications](#), PMS 449-2 (NFES 3362), identifies all materials and ordering procedures and is updated each spring.

Qualification and Certification

The Fish and Wildlife Service is responsible for developing and maintaining employees who will implement all aspects of the Fish and Wildlife Service's fire management program. The Fish and Wildlife Service utilizes NWCG interagency qualification and certification standards, which outline minimum training, experience, and physical fitness requirements to meet this goal. When necessary, the Service will augment interagency standards to include Service-specific wildland and prescribed fire positions. These positions are necessary due to Service requirements for training, experience, and physical fitness which differ slightly from interagency standards. Service-specific positions are established in order to meet Service specific fire management goals. Service-specific positions are defined in a way that allows personnel in the position to transition from the Service specific position into an interagency position when the individual can meet interagency qualifications.

The Incident Qualifications System is a key application subsystem of the Fish and Wildlife Service's Fire Management Information System. It provides the integrating mechanism for managing personnel resources for fire staffing development and in wildland and prescribed fire operational activities. The system provides annual certification of employees for wildland and prescribed fire positions.

A key concept of the wildland and prescribed fire qualifications system is that it is performance-based, i.e., based on demonstrated individual skills, rather than based on requisite training. An individual may become qualified for a position through a combination of experience and education (training). The system allows for subjective evaluation by qualified evaluators of an individual's job performance competency. The bureau may override and withhold job certification if the employee has demonstrated inadequate performance or otherwise does not meet standards (fitness, medical, etc.).

Management is responsible for certifying and documenting wildland and prescribed fire qualifications of its personnel. The certification process is the same as that employed in "Wildland and Prescribed Fire Qualifications System Guide" PMS 310-1 and "Task Book Administrators Guide" PMS 330-1 for fire management personnel.

The Incident Qualifications System is designed to be accessed by each Refuge and Regional Office. These offices input and modify required data for all employees involved in fire management activities.

The Refuge Fire Management Officer is responsible for input and maintenance of all pertinent refuge employee data and for ensuring that employees are trained, qualified, and certified at levels which meet preplanned needs for appropriate management response, initial attack and prescribed fire. All permanent employees involved in fire management will have their qualifications entered. The decision to enter data for seasonal or temporary employees in the qualifications system rests with the local unit. Individual records will be updated when there is a change in qualification, task book or course completion, etc. The Refuge Fire Management Officer is responsible for ensuring the accuracy of annual red cards. The Certifying Official (i.e. Refuge Manager or Project Leader) confirms through the issuance of an incident qualification card that an individual is qualified to perform in a specified position.

Regional Fire Management Coordinators are responsible for monitoring the accuracy of field input, determining and addressing Region wide qualifications and training needs, and assisting those field units not having on-line access capability.

Minimum Service Standards

All Service personnel who perform on-line wildland or prescribed fire duties must have the following NWCG courses: S-130 Basic Firefighter and S-190 Introduction to Fire Behavior, plus fire shelter training. If Standards for Survival was not included in S-130, the course must be taken as a stand-alone 8-hour course. An annual safety refresher course covering the Standard Fire Orders, 18 Watch Out Situations, and Fire Shelter deployment is required. All personnel hired as

primary firefighters must meet the arduous fitness standard to maintain full fire funding and if the position is career status, arduous is required to meet special retirement considerations for fire.

Service Specific Wildland and Prescribed Fire Standards and Criteria

Agency determined skill positions of engine operator (ENOP), dozer operator (DOZ1), and tractor/plow operator (TRPS) are also established to enable the Service to identify technical specialists available to operate equipment on a wildland fire. Normally, personnel in these positions operate this equipment as a part of their regular jobs and are already certified by their Region as qualified operators. Service requirements for training, experience and physical fitness for ENOP, DOZ1, TRPS, RXB3, and ICT5 are documented under Agency Determined Skill Levels within this chapter.

In order to meet Service requirements for a prescribed fire burn boss to conduct prescribed burns subjectively described as "low complexity", the Service has established the Service-specific position of Burn Boss Type 3 (RXB3). "Low complexity" prescribed fires have low risk of escape, no negative impacts if minor escapes occur, require low to moderate burning conditions, do not involve aerial ignition or aerial operations, do not involve multiple fuel complexes or fuels which exhibit extreme fire behavior characteristics (such as California chaparral) and have simple burn objectives. These burns are usually conducted by a crew of 2-6 personnel with someone in charge. Prescribed fires which meet the subjective description of "low complexity" do not require a Prescribed Fire Burn Boss Type 1 or 2 as defined by NWCG.

An interagency Incident Commander Type 5 position was established by NWCG and is documented in the PMS 310-1. The Service has supplemented the training requirements for this position to require Intermediate Fire Behavior S-290 or XS-390 (1981 version), and if wildland urban interface conditions exist adjacent to or on the refuge, Fire Operations in the Urban Interface S-215. Strategy and tactics requirements are met by the experience requirement of Advanced Firefighter/Squad Boss (FFT1).

Wildland Fire Standards

Employees participating in any wildland fire activities on Fish and Wildlife Service or cooperator's lands will meet fitness requirements established in PMS 310-1, except where Service-specific aerobic fitness requirements apply.

Exception to PMS 310-1 Fitness Requirements for On-Refuge Wildland Fire Operations

Refuges which do not have dedicated fire personnel, normally have a light wildland fire workload (minimal occurrence and acreage), do not perform initial actions using direct attack with hand tools, and have no cooperators/contractors to perform timely initial actions on refuge wildland fires can request an exception to NWCG fitness requirements for personnel classified as Firefighter Type 2, Firefighter Type 1, or Incident Commander Type 5. The request is to be made to the Regional Office and will involve review by the Regional Fire Management Coordinator and approval at the Regional Office level. Exception approvals are to be documented in the Refuge Fire Management Plan.

Factors which must be addressed within the request include but are not limited to: fuels, terrain, and tactics employed. Exceptions may be granted where wildland fires occur in light fuels over gentle terrain and initial actions using equipment such as dozers, tractor plows, and engines, as opposed to direct attack with hand tools, are performed. Refuges which demonstrate that an arduous physical fitness rating is not necessary to safely perform initial actions on a wildland fire may use **nonfire personnel** who qualify at the "Moderate" level to perform initial actions.

Exceptions will apply only to initial actions. Should a wildland fire become an extended attack incident (Type III) where interagency personnel are requested through the mobilization system, NWCG wildland fire qualified personnel will be used. No exceptions from arduous fitness levels are allowed for personnel hired as primary firefighters.

Prescribed Fire Standards

Service prescribed fire physical fitness standards are determined based on the fitness definitions in the PMS 310-1, fuel type, terrain, and prescribed fire tactics normally used on the Refuge. Prescribed fire fitness standards may differ from wildland fire fitness standards because prescribed fire activities are a management action and the pace of work is normally set by individuals as opposed to an emergency situation in which the pace of work is generally set by the emergency situation.

Personnel participating in prescribed fire activities on Refuges which have gentle terrain and light to moderate fuel loads are required to attain a "Moderate" physical fitness rating as defined in the PMS 310-1. Moderate is the standard fitness level for Service prescribed fire operations.

Exceptions to the standard are necessary when a Refuge analysis of prescribed fire operations reveals that terrain, tactics and fuels present require physical fitness standards more restrictive than a "Moderate" standard for a specific prescribed fire project. Refuge personnel will meet the highest physical fitness category required to safely conduct prescribed fire operations on the Refuge, determined by terrain, tactics and fuels.

The Regional Office, through the Regional Fire Management Coordinator and other personnel as designated, may review individual refuges or use an ecosystem approach to making the determination as to acceptable fitness levels for prescribed fire. Fitness levels should be documented in the Refuge Fire Management Plan.

Fitness Standards and Requirements

The series of Work Capacity Tests will be used to determine the fitness level for those personnel in fire positions which have an identified fitness level. The Work Capacity Test should not be given to anyone who has any obvious physical conditions or known heart problems that would put them at risk. **The PAR-Q form (www.csep.ca/pdfs/PAR-Q.pdf) must be provided to potential EFF employees and current employees well in advance of when the test will be given. Time must be given for the individual to see a physician if the results of the PAR-Q indicates this is needed.**

Following are the Job-Related Work Capacity Tests for Wildland Firefighters (Pack Test, Field Test, and Walk Test).

Work Category	Test	Distance	Pack	Time
Arduous	Pack Test	3 miles	45 lbs	45 min.
Moderate	Field Test	2 miles	25 lbs	30 min.
Light	Walk Test	1 mile	none	16 min.

There are two documents that deal with physical fitness and ability to perform the job that can be ordered. These are good reference booklets for any office where physical fitness is a part of the job. If a unit is interested in developing a fitness program where government time is provided, these booklets provide suggested guidance for individuals who are inactive to individuals that are already involved in a fitness program. Both may be ordered through the Publication Management System using the NWCG National Fire Equipment System Catalog Part 2: Publications.

- Fitness and Work Capacity, second edition, NFES 1596, PMS 304-2 (1997)
- Fit To Work, latest version

Specific instructions for taking and administering the series of Work Capacity Tests can be found in:

- Work Capacity Test Administrator's Guide, NFES 1109, PMS 307 (April 2003)
- Work Capacity Test (Participants Video, VHS) NFES 1110 (April 2003)
- Work Capacity Test CD ROM (Administrator's Guide Presentation Overview), NFES 1111, (April 2003)

The above items may be obtained by contacting the NWCG National Fire Equipment System (NFES) cache in Boise.

Physical Examinations for Fire Management Positions

The Office of Personnel Management has concluded that agencies have the authority to require physical examinations for positions with specific medical standards or physical requirements. The Fish and Wildlife Service has determined that certain designated fire management positions require physical examinations prior to appointment.

Established medical qualification programs, as stated in 5 CFR 339, provide consistent medical standards in order to safeguard the health of employees whose work may subject them or others to significant health and safety risks due to occupational or environmental exposure or demand. The Federal Interagency Wildland Firefighter Medical Qualification Standards has been piloted in the Southwest Area (DOI agencies only), and will be in the Pacific Northwest in 2003. All other unaffected offices should follow the current standards as described below. More information on the Wildland Firefighter Medical Qualification Standards can be found at: <http://medical.smis.doi.gov/nifcmedicalstds.htm>.

A physical examination is required for all new permanent employees and all seasonal employees assigned to arduous duty as firefighters prior to reporting for duty. A physical examination may be requested for a permanent employee by the supervisor if there is a question about the ability of an employee to safely complete one of the work capacity tests. All new permanent fire funded (92XX) employees are required to have a physical examination. All permanent employees over 40 years of age who take the pack or field test to qualify for a wildland or prescribed fire position are required to take an annual physical examination before taking the test.

- Physical examination shall use Standard Form 78 (SF-78), Certification of Medical Examination specific for arduous and moderate duty fire management activities and Form 1400-108 Physical Requirements for Firefighter and Smokejumper Positions (Supplement to SF-78).
- All examinations are at Government expense and should be charged against the 9251 subactivity for preparedness personnel and 9263 for dedicated prescribed fire personnel.
- The physical examination required for refuge law enforcement officers may be substituted for the fire physical examination. Two separate physical examinations are not required.
- Completed physical examination forms requiring a second opinion are to be submitted through Personnel to the Chief, Division of Medical and Health Services, at the Department for certification of an employee's fitness for duty.

Each refuge may designate the examining physician, but must offer the individual an opportunity to submit medical documentation from their own personal physician. The Regional Fire Management Coordinator should audit medical examination costs periodically to avoid unnecessary expenditures.

All Fish and Wildlife Service employees considered for firefighting duties will meet the Job-Related Work Capacity Tests for Wildland Firefighters. When the Job-Related Work Capacity Tests for Wildland Firefighters is to be given, the Work Capacity Test Record [Exhibit 1-5-1](#) will serve as the record that the employee has met the physical requirements as mentioned above.

If the Fire Management Officer or the employee has any question concerning the person's ability to physically perform firefighting duties, the employee should not be qualified for a wildland or prescribed fire position.

SF-78 and Supplement Information ([Exhibit 1-5-2](#))

Agency Determined Skill Levels

The following positions are not covered under the Wildland and Prescribed Fire Qualification System Guide, PMS 310-1 (310-1), dated January 2000. They have been established to enable the Service to use refuge expertise to continue a safe and effective fire management program where (1) the level of qualification established in 310-1 is not necessary and/or (2) technical specialists are available to accomplish jobs otherwise contracted out to private sector.

- Engine Operator
- Tractor/Plow Operator
- Dozer Operator
- Prescribed Fire Burn Boss Type 3

The Incident Commander Type 5 (ICT5) position is covered under the Wildland and Prescribed Fire Qualification System Guide, PMS 310-1 (310-1) dated January 2000. However, the Service has supplemented those qualifications for Service personnel. The Service requires the completion of Intermediate Wildland Fire Behavior (S-290) prior to an employee being qualified for the ICT5 position. Fire Operations in the Urban Interface (S-215) is also required if interface situations exist adjacent to or on the refuge. The completion of this additional training is not discretionary--it is mandatory for Service employees for this position.

An individual should not be given a position performance assignment if additional knowledge and skills required to perform the tasks of a position are not first obtained, either through formal training or other methods.

POSITION: Engine Operator (ENOP) Note: Duties of the engine operator are limited to driving the vehicle, operating the pump on the vehicle and using the hard line for vehicle protection.

- EXPERIENCE: Firefighter (FFT2), Experience on engine crew
- REQUIRED TRAINING: Intermediate Fire Behavior S_290
- ADDITIONAL TRAINING WHICH SUPPORTS DEVELOPMENT OF KNOWLEDGE AND SKILLS: Portable Pumps and Water Use, S-211, Driving for Fire Service S_216, Supervisory Concepts and Techniques, S_201
- PHYSICAL REQUIREMENTS: Arduous (Moderate for RX fire)
- OTHER POSITIONS MEETING CURRENCY REQUIREMENTS: None

POSITION: Tractor/Plow Operator (TRPS)

- EXPERIENCE: Firefighter (FFT2) AND Certified FWS Heavy Equipment Operator
- REQUIRED TRAINING: Intermediate Fire Behavior S_290
- ADDITIONAL TRAINING WHICH SUPPORTS DEVELOPMENT OF KNOWLEDGE AND SKILLS: Tractor/Plow Boss S_233
- PHYSICAL REQUIREMENTS: Moderate
- OTHER POSITIONS THAT MEET CURRENCY REQUIREMENTS: None

POSITION: Dozer Operator (DOZ1)

- EXPERIENCE: Firefighter (FFT2) AND Certified FWS Heavy Equipment Operator
- REQUIRED TRAINING: Intermediate Fire Behavior S_290
- ADDITIONAL TRAINING WHICH SUPPORTS DEVELOPMENT OF KNOWLEDGE AND SKILLS: Tractor/Plow Boss S_233
- PHYSICAL REQUIREMENTS: Moderate
- OTHER POSITIONS THAT MEET CURRENCY REQUIREMENTS: None

POSITION: Prescribed Fire Burn Boss Type 3 (RXB3)

- EXPERIENCE: Crewmember (FFT2), Experience in the NFFL fuel model in which the RXB3 will be working.
- REQUIRED TRAINING: Intermediate Fire Behavior S_290, Basic Wildland Fire Behavior Calculations S_390, XS_390 (1981) will substitute for S_290 and S_390, Prescribed Fire Planning and Implementation or equivalent, i.e., RX-300.
- ADDITIONAL TRAINING WHICH SUPPORTS DEVELOPMENT OF KNOWLEDGE AND SKILLS: Field Observer, S244
- PHYSICAL REQUIREMENTS: Moderate. Exceptions to the standard are necessary when a refuge analysis of prescribed fire operations reveals that terrain, tactics and fuels present require physical fitness standards may be more restrictive than a "Moderate" standard for a specific prescribed fire project. Refuge personnel will meet the highest physical fitness category required to safely conduct prescribed fire operations on the Refuge, determined by terrain, tactics and fuels.
- OTHER POSITIONS THAT MEET CURRENCY REQUIREMENTS: None

POSITION: Incident Commander Type 5 (ICT5)

- EXPERIENCE: Advanced Firefighter/Squad Boss (FFT1)
- REQUIRED TRAINING: Intermediate Fire Behavior S-290 or Fire Behavior XS-390 (1981 version), Fire Operations in the Urban Interface S-215 (required if wildland urban interface situations exist adjacent to or on the refuge).
- ADDITIONAL TRAINING WHICH SUPPORTS DEVELOPMENT OF KNOWLEDGE AND SKILLS: Initial Attack Incident Commander S-200, Ignition Operations S-234, Supervisory Concepts & Techniques S-201
- PHYSICAL REQUIREMENTS: Arduous.
- OTHER POSITIONS THAT MEET CURRENCY REQUIREMENTS: FFT1

1.5.2 SAFETY OPERATIONS

Responsibilities

The goal of the fire safety program is to provide direction and guidance for the safe and effective management of fire incidents. Safety is the responsibility of everyone assigned to a wildland or prescribed fire incident. Safety is an attitude which must be promoted at all operational levels from the Director to the agency administrators (Refuge Managers) and employees in the field. The safety of employees and visitors alike must be of prime concern during fires. Agency administrators at all levels need to stress that firefighter and visitor safety always takes precedence over property and resource loss.

In addition to this guideline, agency administrators, program managers and fireline supervisors need to be familiar with the safety considerations and procedures found in the following documents:

- National Wildfire Coordinating Group (NWCG) 410-1 [Fireline Handbook](#)
- [Service Manual](#)

Training and Qualifications

Leadership Requirements. Knowledgeable leadership is a significant safety factor when dealing with fire. Experience, training, and physical fitness are required of all people in leadership roles in fire operations. Sufficient knowledge is necessary for managers to protect themselves, their crews and the resources of the refuge.

Standards. The training program and the qualification and certification process are the foundations of the safety program. Only fully qualified personnel will be assigned fire duties. All fire personnel, whether on wildland or prescribed fire, must meet Fish and Wildlife Service qualifications for their fire job.

- Trainees. All trainee assignments are to be closely supervised by an individual qualified for the position. This is critical due to hazardous and stressful conditions present at a fire. Reference should be made to the NWCG Wildland Fire Qualification System for appropriate standards.

- Minimum Service Standards. All Service personnel who perform on-line wildland firefighter or prescribed fire duties must have the following NWCG courses: S-130 Basic Firefighter and S-190 Introduction to Fire Behavior, or the Service Basic Fire Management Training. If Standards for Survival was not included in S-130, the course must be taken as a stand-alone 8-hour course. An annual safety refresher course covering the Standard Fire Orders, 18 Watch Out Situations, and Fire Shelter deployment is required.
- Emergency Firefighters. Emergency firefighters (those hired on Emergency Employment Time Slips [OF-288]) should be used only in situations where regular firefighters are not available. Under no circumstances shall these individuals be hired and assigned to fire duty without fully qualified supervision. Emergency firefighters must pass the work capacity test at the arduous level (pack test) as a condition of employment before being placed on the fireline. In addition, emergency firefighters must attend S-130 and S-190.

The practice of hiring personnel off the streets in nearby communities and placing them on firelines without meeting these provisions is strictly prohibited.

Field Operations

Briefings. The Refuge Manager, through the Incident Commander (IC) of an incident management team, must ensure that safety factors are covered with incident personnel at all operational briefings, and that safety briefings are occurring throughout the fire organization. The identification and location of escape routes and safety zones must be stressed. The IC, safety officer, fire behavior analyst, and remainder of the command and general staff should use fire orders and "watch out" situations for guidance at strategy meetings, during briefings, and when developing the incident action plan, safety message, and medical plan.

Fire Orders. The "10 Standard Fire Orders," "18 Watch Out Situations," and "Common Denominators of Fire Behavior on Tragedy Fires" follow.

All fire suppression actions must be undertaken in compliance with "18 Watch Out Situations." If any proposed suppression action would be in conflict with ANY "Watch Out Situations," ALL of the "Standard Fire Orders" must be able to be complied with or the proposed suppression action revised accordingly.

FIRE ORDERS

- F Fight fire aggressively, but provide for safety first.
- I Initiate all action based on current and expected fire behavior.
- R Recognize current weather conditions and obtain forecasts.
- E Ensure instructions are given and understood.
- O Obtain current information on fire status.
- R Remain in communication with crew members.
- D Determine safety zones and escape routes.
- E Establish lookouts in potentially hazardous situations.
- R Retain control at all times.
- S Stay alert, keep calm, think clearly, act decisively.

WATCH OUT SITUATIONS

1. Fire not scouted and sized up.
2. In country not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uninformed on strategy, tactics, and hazards.
6. Instructions and assignments not clear.
7. No communication link with crew members or supervisor.
8. Constructing line without safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting frontal assault on fire.
11. Unburned fuel between you and fire.
12. Cannot see main fire, not in contact with someone who can.
13. On a hillside where rolling material can ignite fuel below.
14. Weather becoming hotter and drier.
15. Wind increases and/or changes direction.
16. Getting frequent spot fires across line.
17. Terrain and fuels make escape to safety zones difficult.
18. Taking nap near fireline.

COMMON DENOMINATORS OF FIRE BEHAVIOR ON TRAGEDY FIRES

- Most incidents happen on the smaller fires or on isolated portions of larger fires.

- Most fires are innocent in appearance before the "flare-up" or "blow-up." In some cases, tragedies occur in the mop-up stage.
- Flare-ups generally occur in deceptively light fuels.
- Fires run uphill surprisingly fast in chimneys, gullies, and on steep slopes
- Some suppression tools, such as helicopters or air tankers, can adversely affect fire behavior. The blasts of air from low flying helicopters and air tankers have been known to cause flare-ups.

Safety Officers. At least one safety officer should be assigned to a fire when any of the following conditions exist:

- There is complex or critical fire behavior.
- There is a complex air operation.
- The fire is in an urban interface.

Safety officers (and all other personnel) are authorized to exercise emergency authority to stop and prevent unsafe acts.

Additional safety assistants with functional expertise in areas such as logistics and aviation should be ordered as required by the complexity of the incident.

When encountering hazardous materials on an incident, the supervisor should ascertain whether suppression action is necessary in light of the added risk. The supervisor should keep his or her subordinates clear of the area and immediately notify the safety officer.

Temporary closure of a refuge, or a portion of it, should be exercised when large or erratically behaving fires are present. When a fire threatens escape from the refuge, adjacent authorities should be given as much advance notice as possible in order to achieve orderly evacuation.

Evaluations. Evaluations are to be completed for all resources (crews, engines, aircraft, dozers, overhead) assigned to an incident at the completion of the incident. Attention to safety factors is critical to the evaluation process. These evaluations must be honest appraisals of performances. The documentation of sub-standard or unsafe performances is mandatory.

Aviation

Fixed wing aircraft and helicopters are valuable resources for wildland fire suppression. Aircraft serve as a suppression tool or as a platform well above a fire allowing the Incident Commander the opportunity to observe the fire situation quickly and completely. Suppression strategies can then be established that conserve resources and prevent placing personnel and equipment in hazardous positions.

Aircraft are available for either fire related or other management purposes. The Office of Aircraft Services (OAS), Department of the Interior, inspects aircraft and approves pilots used on contracts and rental aircraft agreements.

- Fish and Wildlife Service stations may use pilots approved and certified by the OAS for specific missions without reinspection if the pilot holds one of the following OAS cards:
 - Form OAS-30A, Pilot Qualification (Airplane).
 - Form OAS-30B, Pilot Qualification (Helicopter).
 - Form OAS-30C, Airtanker Pilot Qualifications
- Fish and Wildlife Service stations may use pilots with OAS approval for point-to-point transportation regardless of the specific type of approval document.
- For other than point-to-point operations, be sure to look at the back of the Airplane Pilot Qualification card (OAS-30A) or Helicopter Pilot Qualification card (OAS-30B) for operational restrictions.

The OAS inspects and approves aircraft used on contract and rental agreements.

- Fish and Wildlife Service stations may use an aircraft approved by the OAS for specific missions without reinspection if they have one of the following OAS cards:
 - Form OAS-36A, Aircraft Data Card (Fixed-wing).
 - Form OAS-36B, Aircraft Data Card (Helicopter).
 - Form OAS-36C, Aircraft Data Card (Airtanker).
 - Form OAS-47 EDP, Aircraft Data Card, rental use only, not for special use or contract (point to point).
- Fish and Wildlife Service stations may use OAS carded aircraft for point-to-point transportation regardless of the specific type of approval document.
- For other than point-to-point operations, be sure to look at the Aircraft Data Card (OAS-36A or B) for operational restrictions.

An approved list of certified aircraft is issued periodically by the OAS which provides vendor information, aircraft types, aircraft capabilities, and hourly rates.

If no approved aircraft are available, it is necessary to submit a Request for Rental Services form (OAS-20), to the OAS. This can be accomplished by contacting OAS at the National Interagency Fire Center (NIFC) or through your Regional Aircraft Manager or Fire Management Coordinator. However, both aircraft and pilot must be certified through OAS. This process can be time consuming, depending on the number of requests OAS has on file. Sufficient lead time (2 to 6 months) must be allowed to ensure availability when needed. It is also permissible to use Forest Service certified aircraft and pilots. Pilots and aircraft should be checked for current cards for the mission requested.

Field stations should expect to be billed by OAS for costs of carding additional aircraft on a special basis. Waiting until OAS is scheduled to inspect operators in the area usually eliminates extra costs.

Helicopters are used in aerial prescribed burn operations with the helitorch or ping-pong ball ignition devices. Use of helicopters allows the ignition of large blocks of fuel quickly and precisely with more efficiency and safety than a ground crew in the same fuel type.

There are specific guidelines and training requirements that must be followed when using a helicopter mounted ignition device. The Interagency Aerial Ignition Operations Guide, produced by OAS, provides necessary guidance. Ground crew and aircraft certification for the use of fixed and rotary wing mounted aerial ignition devices is required.

When contract aircraft are being used for wildland or prescribed fire operations, managers are responsible for the accurate completion of the Aircraft use report (OAS-23). Each station has a designated "Billee" code that has been assigned by OAS to that Station. This Billee code must be identified on the OAS-23. The Regional Aircraft Manager or Fire Management Coordinator should be contacted to obtain this code.

Completed OAS-23 forms should be sent to the Office of Aircraft Services, Boise, as soon as the mission is completed. For exclusive use contracts, submission of OAS-23's should be in accordance with procedures discussed at the pre-work meeting.

Vehicles

Managers and fire program supervisors will ensure that all vehicles meet GSA and agency safety standards. All vehicles employed on incidents will be provided with a safety inspection appropriate to their use and prior to their release.

Operation - All engine units will not operate at more than the manufacturers' gross vehicle weight. The following hour limitations shall apply to personnel engaged in driving. These limitations apply to personnel directly involved within an incident. Driving time is defined as the operation of a fire apparatus to or from an incident on a designated highway or roadway. Reference the NWCG Interagency Incident Business Management Handbook.

Federal Motor Carriers Safety Regulations, part 395.3 and State Laws restrict drivers whose assignment requires a commercial drivers license (CDL) to 10 hours driving time in a 15 hour duty day with 8 hours off between shifts. Drivers whose duty period is not limited by law may not exceed 10 hours driving time in a 16 hour duty day with 8 hours off between shifts.

Engine Driving - All engine operators will meet Fish and Wildlife Service minimum skill and training requirements for specific vehicle classifications. Engine drivers must have successfully completed Intermediate Fire Behavior S-290, and be qualified as Firefighter 2(FFT2) with engine crew experience.

Commercial Driver's Licenses - There are three types of Commercial Driver's Licenses:

1a Class A - any combination of vehicles with a gross combination weight rating (GCWR) of 26,001 pounds or more if the GVWR of the vehicle(s) being towed is greater than 10,000 pounds.

2a Class B - single vehicles with a GVWR of 26,001 pounds or more.

3a Class C - vehicles not meeting the definitions of Class A or B, but are either designed to carry 16 or more people (including the driver), or carry hazardous materials in quantities large enough to require placards.

Check with your state's Division of Motor Vehicles for additional requirements.

1.5.3 EQUIPMENT

Personal Protective Equipment

It is mandatory that all firefighting personnel be equipped with the proper personal protection equipment (PPE); operational personnel on wildland and prescribed fires are required to use PPE. Common permanent-press materials are not to be worn, as they can melt and stick to the skin when exposed to flame or heat. Mandatory PPE includes:

- 8" high laced leather boots
- fire shelter
- hard hat with chin strap
- goggles
- ear plugs
- aramid shirts
- aramid trousers
- leather gloves
- individual first aid kits

Special PPE and hazard analysis is required for operations involving alum-gel, aircraft (particularly helicopters), and felling.

These include:

- Chainsaw chaps
- Earmuffs
- Face shield
- Crash helmet
- Dust masks
- Spark resistant clothing
- Respirators suitable for powders as alum-gel

Use

Use of safety equipment is required of all personnel exposed to fireline hazards, including prescribed fire operations. Employees must be trained to use safety equipment effectively.

Head Protection. Personnel must be equipped with hard hats and will wear them at all times while on the fireline. Hard hats must be equipped with a chin strap which will be fastened while riding in, or in the vicinity of, helicopters.

Helicopter crewpersons and helitack crews will be issued and wear crash helmets with chin strap securely fastened when riding in helicopters. All contract helicopter personnel, including mechanics, must comply with this standard.

Metal hard hats will not be worn. Hard hats must meet ANSI Standard Z89.2-1986 for penetration protection, and ANSI Standard test for 20,000 volt electric non-conductor. The "Helmet, safety, wildfire" NSN 8415-01-055-2265 listed in GSA's Wildfire Protection Equipment and Supplies Catalog meets these standards. Only this helmet is acceptable for fireline use.

Eye and Face Protection. The following positions require the wearing of goggles: nozzle person, chainsaw operator, heliport and ramp personnel, and retardant mixing crewmen. Other personnel in the immediate vicinity of these operations may also require eye protection. Full face protection offered by face shields must be worn by tool sharpeners using power sharpeners and terra-torch nozzle operators.

Hearing Protection. Personnel who are exposed to a noise level in excess of 90 db must be provided with, and wear, hearing protection. Seasonal fire crew members must be issued two pairs of earplugs, either universal or fitted type, at the beginning of the fire season. Other fire crew members must be issued earplugs upon fire assignment. Personnel must be trained in the use and cleaning of earplugs to prevent hearing damage and hygiene problems.

Earmuffs will be issued to the following positions:

- Chainsaw and portable pump operators
- Heliport and aircraft ramp personnel
- Retardant mixing crewmen
- Any other personnel exposed on a regular basis to damaging noise levels. Intermittent saw and pump operators may use earplugs.
- Engine operators.

National Fire Equipment System kits contain earmuffs for the above positions. Any kits maintained on refuges for these positions must also comply with the kit's hearing protection standards.

Body Protection. Employees engaged in wildland or prescribed fire operations must wear fire resistant clothing consisting

of aramid shirt, aramid trousers, or aramid coveralls and leather gloves. You must ensure that the fire resistant clothing meets National Fire Protection Association (NFPA) 1977 standards and is labeled as "NFPA 1977 Compliant" before use. Because most man-made fibers melt when exposed to flame or extreme radiant heat, personnel should wear only undergarments made of 100 percent cotton or wool, aramid, or other fire resistant material. Uniform clothing will not be worn under fire shirts or trousers due to the synthetic material of some uniform items and the potential heat stress contributed by an extra layer of clothing regardless of the type of material. One hundred percent cotton clothing will not be worn in place of aramid material. Clothing must be worn in accordance with the manufacturer's recommendations and Service requirements. Supervisors shall be responsible to ensure the use, adequacy, maintenance and sanitation of clothing issued by the Service.

Fixed and rotary wing aircraft crews and aircraft support personnel must wear all aramid outer clothing and gloves or leather gloves. Wool and/or cotton outer garments are not acceptable for aircraft use.

Personnel working in helitorch operations must wear fire resistant synthetic fiber clothing with an anti-static finish to reduce the possibility of flash fires. Clothing that becomes sprinkled or soaked with fuel must be thoroughly rinsed with water prior to removal and the individual must be grounded to dissipate any potential static buildup. One person must stand by with a fire extinguisher while the individual removes contaminated clothing.

Leg Protection. Chainsaw chaps must be worn by all chainsaw operators. Pants should be bloused or secured at the ankle if there is danger from burns by stepping in ash pits.

Foot Protection. Personnel assigned to fires must wear heavy duty, all leather, lace type work boots with non-slip (Vibram type) melt resistant soles and heels. The leather top must be at least 8 inches in height, measured from the top of the heel. Red carded fire line permanent, temporary and seasonal Fish and Wildlife Service personnel will be provided with these boots from station funds not more often than every three years. Emergency or casual fire fighters will provide their own boots. Some refuge situations may require special footwear such as waders, hip boots, snake boots, etc.

Fire Shelters. Fire shelters will be issued and worn by all line personnel. They will be inspected regularly, and "training" shelters will be deployed annually at required refresher safety training. The shelter is to be viewed as a last resort, and will not be utilized as a tactical tool. Supervisors and firefighters must never employ fire shelters instead of using well-defined and pre-located escape routes. All shelter deployments will be investigated and reviewed.

Firing Equipment. A firing plan with an adequate job hazard analysis approved by the operations section chief, safety officer, and fire behavior analyst, is required prior to utilizing firing equipment with mass ignition capabilities, and/or when using fireline explosives.

1.5.4 STRUCTURAL FIREFIGHTING

Fish and Wildlife Service wildland fire management personnel are neither trained nor qualified in structural firefighting. Structural firefighting is not the functional responsibility of the Fish and Wildlife Service. This includes structures owned by the Fish and Wildlife Service. Structural and vehicle firefighting is the responsibility of State and local fire jurisdictions, rather than the Service. We should make every effort to encourage those with the primary responsibility to meet this need. Under no circumstance should we allow either the public or our cooperators to rely on the Service to provide this service. Cooperative agreements with local structural fire departments should be pursued for protection of Fish and Wildlife Service owned structures.

To ensure clear understanding of the policy for the Service, it is repeated below from [241 FW 7.1](#) and [095 FW 3.8.C.](#):
Structural firefighting is not the functional responsibility of the Service. Service assistance in structure protection should only be performed on an emergency basis to save lives. Service fire personnel may assist in protecting wildlands around a structure or protecting the structure's exterior from approaching fire when such action can be accomplished safely. Service fire personnel will be made aware of safety hazards associated with suppression activities around structures and transportation systems.

- Employees should not knowingly be placed in a position where exposure to noxious gases or chemicals or other situations require the use of self-contained breathing apparatus.
- Cooperative agreements will not commit Service personnel to structural fire suppression.

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**Exhibit 1-5-1: WORK CAPACITY TEST RECORD*****To be completed by employee:***

Name (last, first): _____

Where employed: _____

[Back](#)

Date of Birth: _____ Height: _____ Weight: _____

Date test taken: _____

Test administered by: _____ (print name)

ICS position for which test is required (highest needed): _____

Performance level needed (circle one): Arduous - Moderate - Light

Type of test taken (circle one): Pack Test - Field Test - Walk Test

Work Capacity Test Descriptions:

	Pack Test	Field Test	Walk Test
Pack Weight	45 lbs.	25 lbs	None
Distance	3 miles	2 miles	1 mile
Time	45 minutes	30 minutes	16 minutes

To be completed by test administrator:

Test result time: _____

Employee passed test (circle one): yes / no

*I certify that the pack test was administered according to Bureau guidelines.*_____
(Signature of Test Administrator) (Title) (Date)



Exhibit 1-5-2: SF-78 AND SUPPLEMENT INFORMATION

The following information must be included on Standard Form No. 78, Certificate of Medical Examination:

Part B.3. (Brief Description of What Position Requires Employee To Do) state:

[Back](#)

Participates in fire suppression activities in rugged mountainous terrain from sea level to over 10,000 ft. elevation. Uses a variety of hand tools, power saws, and pumps. Exposed to long and irregular working hours under exhausting conditions, including adverse weather conditions required to maintain physical performance over long periods of time.

Part B.4. (Circle the number proceeding each functional requirement and each environmental factor essential to the duties of this position. List any additional essential factors in the blank spaces.) Circle and/or include (underlined) the following:

A. FUNCTIONAL REQUIREMENTS

1. Heavy lifting, 45 pounds and over
4. Heavy carrying, 45 pounds and over
6. Pulling hand over hand (8 hours)
10. Reaching above shoulder
11. Use of fingers
12. Both hands required
- 13 Walking (16 hours)
14. Standing (16 hours)
16. Kneeling (3 hours)
17. Repeat bending (12 hours)
18. Climbing, legs only (8 hours)
19. Climbing, use of legs and arms
20. Both legs required
21. Operation of crane, truck, tractor, or motor vehicle
22. Ability for rapid mental and muscular execution simultaneously
28. Both eyes required
35. Other (specify) See attached Supplemental Form 1400-108

B. ENVIRONMENTAL FACTORS

2. Outside and inside
3. Excessive heat
4. Excessive cold
6. Excessive dampness
7. Dry atmospheric conditions
8. Excessive noise
10. Dust
12. Fumes, smoke, or gasses
17. Slippery or uneven walking conditions
18. Working around machinery with moving parts
19. Working around moving objects or vehicles
22. Unusual fatigue factors
23. Working with hands in water
26. Working closely with others
27. Working alone
28. Protracted or irregular hours of work
29. Other (specify) travel in isolated areas

Form 1400-108: Physical Requirements for Firefighters and Smokejumper Positions, must be included with SF-78 and each function must be addressed by the examining physician:

- Eyesight
- Ears
- Nose, Mouth & Throat
- Teeth
- Lungs
- Heart & Blood Vessels
- Abdomen
- Genitourinary Metabolic
- Spine, Pelvis, Sacroiliac & Lumbosacral Joints
- Extremities
- Nervous System
- Skin
- Other Defects



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Financial Management\]](#) [\[9251\]](#) [\[9261\]](#) [\[9262\]](#) [\[9263\]](#) [\[9264\]](#) [\[9265\]](#)



1.6 FINANCIAL MANAGEMENT

1.6.1 INTRODUCTION

This chapter describes in detail the various Fish and Wildlife Service fire management accounts. Station managers, Regional Fire Management Coordinators (RFMC), and Fire Management Officers (FMO) must be aware of the responsibilities and limitations on the use of the Wildland Fire Management Appropriation.

Funding for fire management activities is provided through the combined Department of the Interior Wildland Fire Management Appropriation which is actually granted to the Bureau of Land Management. The appropriation is based on each bureau's input using the Most Efficient Level (MEL) concept of least cost management determined by fire management planning and FIREBASE analysis of the actual workload. Each agency's portion of the appropriation is distributed to them by allotment from BLM through the Treasury Department. Fire management funds are no year funds which are distributed to each Region. No year funds do not expire at the conclusion of a fiscal year. Any unexpended balance is carried over to the next fiscal year.

The appropriation consists of two Activities: *Wildland Fire Preparedness* and *Wildland Fire Operations*. The Wildland Fire Preparedness activity has only one subactivity - *Preparedness*. The Wildland Fire Operations activity has three subactivities - *Emergency Suppression*, *Emergency Rehabilitation*, and *Hazardous Fuel Reduction Operations*.

Particular attention should be paid to the procedures and limitations applicable to the use of funds used in wildland fire operations. When funds from these accounts are being utilized, it is imperative that the Program Assistant Regional Director, Regional Fire Management Coordinator, Fire Management Officer and Incident Commander/Prescribed Fire Burn Boss ensure that proper administrative procedures are followed from the beginning of the incident until its conclusion. The IC/RXB is responsible to the Refuge Manager for the efficient and proper expenditure of funds in order to achieve fire management objectives. The Refuge Manager is still the responsible Line Officer for all actions.

The *Preparedness* subactivity consists of all the actions needed to prepare for the response to wildland fire ignitions. This includes staffing, training and equipping forces to be ready and available to respond to wildland fires and take appropriate management action.

The *Emergency Suppression* subactivity includes all the actions and costs required to actively respond to wildland fires and implement an appropriate management response(s). Travel, transportation and subsistence of all forces needed to manage a going wildland fire may be charged to this account. In addition, elevated levels of emergency preparedness necessary to respond to short term increases in fire activity due to weather events, public activities or arson can be funded from this subactivity. Costs associated with severity needs, such as additional staffing due to prolonged drought conditions accrue here also, but severity requires specific authorization from the Director.

The *Emergency Rehabilitation* subactivity provides funds to take necessary actions to prevent erosion or invasion by exotic species following a wildland fire event.

[Home](#)

[What's New](#)

[Preparedness](#)

[Policy](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Introduction](#)

[Financial Management](#)

[9251](#)

[9261](#)

[9262](#)

[9263](#)

[9264](#)

[9265](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

The *Hazardous Fuel Reduction Operations* subactivity provides funding to reduce hazardous fuel loadings, both by use of prescribed fire and through mechanical reductions, and to use prescribed fire to reintroduce fire to the ecosystem.

1.6.2 FINANCIAL MANAGEMENT

Fire Accounts

Fish and Wildlife Service funding for fire management is found in: 9251, 9261, 9262 and 9263 subactivities. Preparedness and program management costs are funded under 9251. Wildland fire operations including emergency suppression and the full range of appropriate management responses to wildland fire are funded under 9261. Emergency rehabilitation actions are funded by 9262. Hazardous fuel reduction operations, including prescribed fire use and application, and mechanical reduction or chemical application as a necessary precursor to the application of prescribed fire, are charged to 9263.

Base Eight Pay for Fire Management Activities

Wildland Fire Operations: Personnel costs for wildland fire operations are charged to a specific fire number which becomes a fire project code when activated through the Denver Finance Center. Employees regularly paid from any source other than 9251 or 9263 will charge all time on wildland fire operations to the 9261 subactivity and the fire number. This includes base eight hours, overtime and hazard or environmental differential premiums. However, the base eight hours for personnel whose regular salary is paid from 9251 or 9263 will remain charged to their regular funding source with the appropriate fire number assigned as a project code. Only their overtime and hazard or environmental differential will be charged to 9261 and the fire number. The same processes are followed for emergency preparedness and emergency rehabilitation. Severity charges are similar except that the specific severity code included in the Director's authorization is used as the project code.

Hazardous Fuel Reduction Operations: Personnel costs for prescribed fire operations and authorized mechanical fuel reduction operations are charged to a specific fire number which becomes a project code when activated through the Denver Finance Center. Hazardous fuel charges differ from wildland fire operations in that only employees regularly paid from 9263 will charge their base eight hours pay to 9263. All personnel paid from any other account will continue to charge their base eight hours to their regular activity. Only overtime costs maybe charged to 9263 by these personnel. Hazard pay and environmental differential are not authorized for prescribed burning activities.

Why must non-9263 personnel charge their regular accounts for base eight on prescribed fires? To do otherwise would constitute misappropriation of funds. Since these positions are already fully funded they cannot be shifted to another activity without resulting in augmentation of funding to the base account. Wildland fire operations are deemed to be emergencies which take precedent over all other activities, and shifting base eight salary is allowed to provide a means to detail temporary replacements or pay overtime to accomplish the individual's regular duties while they are in the emergency assignment.

Fire Account Review Procedures

The Fire Management Branch and the Regional Offices will monitor fire accounts to insure that expenditure targets are being met, and that expenditures are for legitimate fire management activities as defined for the various subactivities in this chapter.

Formal fiscal reviews of field stations and Regional Offices will be conducted by the Fire Management Branch in conjunction with the Regional Offices. These reviews will occur on a rotating basis with at least one Region done each year.

Accounting

The Fish and Wildlife Service accounting system runs under the Federal Financial System (FFS). There are a number of funding source codes used for fire management. The codes are listed below with explanations and examples of appropriate and prohibited uses.

Wildland Fire Preparedness

Subactivity: 9251 - Preparedness

Preparedness funds provide for the overall management and planning of the Fish and Wildlife Service's fire management program and to prepare for the ability to respond to wildland fire ignitions. Normal preparedness includes all activities undertaken in advance of fire occurrence to help ensure more effective suppression or other appropriate management actions. This includes the establishment and funding of interagency agreements and interagency fair share contributions.

- Appropriate Uses
 - Program oversight and management at the field station, Regional, and national offices, particularly those activities associated with preparedness for expected annual wildland fire season workloads.
 - Staffing.
 - Interagency cooperative fire planning and management.
 - Prevention and preparedness.
- Appropriate Expenditures
 - National and regional Activities
 - National and regional fire prevention activities.
 - Support for national and regional task groups.
 - Support for interagency coordinating groups, such as the National Wildfire Coordinating Group, Alaska Interagency Fire Management Council and Geographic Coordination Groups.
 - Travel for program oversight and review by national and Regional staff.
 - Printing.
 - Purchase of equipment and supplies.
 - Preparedness Operations
 - Salaries and premium pay for personnel as authorized by the preparedness analysis portion of FIREBASE.
 - Fire prevention activities, including:
 - Prevention displays and materials.
 - Publicity exhibits.
 - Educational activities.
 - Spark arrester inspections.
 - Prevention patrols.
 - Enforcement of burning regulations.
 - Travel associated with prevention activities.
 - Fire detection activities, including:
 - Infrared detection.
 - Electronic detection.
 - Ground detection patrols.
 - Routine aerial reconnaissance on a fixed schedule.
 - Equipment readiness, including:
 - Supplies and equipment, including personnel protective equipment.
 - Rent and lease of equipment and vehicles.
 - Vehicle maintenance.
 - Equipment maintenance.

- Operational support, including:
 - Arduous duty physical examinations.
 - Warehousing and fire cache operations.
 - Dispatching/logistical center operations.
 - Rent and utilities for fire offices.
 - Purchase and maintenance of weather station equipment.
 - Remote sensing when used for fire or lightning detection.
 - Travel associated with management of preparedness program or cooperative fire management activities.
- Fire aviation operations, including:
 - Aircraft availability contracts.
 - Aircraft inspections.
- Communications, including:
 - Maintenance of radio, telephone, data communications, and recording equipment.
 - Rental, purchase and lease of such equipment.
- Clerical support, including:
 - Salaries and premium pay for temporary clerical personnel authorized by FIREBASE analysis.
 - Office supplies.
 - Rental, purchase or lease of accountable office equipment.
- Training
 - Training at the national level (i.e., 400, 500, 600 series courses) teaching incident management and suppression skills.
 - Local or Regionally sponsored training (i.e., 100, 200 and 300 level courses) teaching incident management and suppression skills.
 - Travel associated with any of the above training as students or instructors.
 - Purchase of training materials.
 - Development of training courses.
- Capital Equipment
 - Purchase of capital equipment used for wildland fire preparedness and suppression. Includes such items as fire engines, tractor plow units, remote automated weather stations, pumps, radios, and computers. Purchases must be approved by Regional Fire Management Coordinators and must be supported by fire management plans.
- Interagency Fair Share
 - Fair share contributions for interagency shared resources such as dispatch centers and tanker bases.
 - Operation of the wildland fire computer system and national communication systems such as GEONET and WIMS.
- National Computer System Operations (FMIS)
 - Operation of the Fire Management Information System.
 - Contract software development and systems management at the Fire Management Branch.
- Staffing
 - Salaries for permanent or temporary staffing that provide planning and oversight functions for fire management programs at field stations, Regional Offices and the Fire Management Branch. Positions must be justified by the FIREBASE analysis and approved by Regional Fire Management Coordinators or the Service Fire Management Coordinator.
 - Budgeted overtime and premium pay for preparedness fire management personnel not actually involved in wildland fire suppression operations.
- Prohibited Uses
 - Funding non-fire positions or work.
 - Purchasing non-fire related supplies or equipment.

Subactivity: 9261 - Suppression Operations

All costs associated with Suppression Operations will be charged to 9261. This includes

suppression, emergency preparedness, and severity funding.

These funds provide for all aspects of appropriate management of wildland fires, emergency preparedness and escalated preparedness funding based on abnormally extreme fire potential (severity). Includes costs of firefighters and support personnel, supplies, equipment rental, replacement of lost or damaged capitalized equipment, contracts for goods and services, dispatch and logistical support, immediate measures taken to correct damages resulting from the fire suppression effort, and any suppression cost recovery efforts. Severity funding includes any costs detailed in any severity funding request initiated by a Regional Director and authorized by the Director, Fish and Wildlife Service. All severity charges require use of a project number assigned by the National Wildlife Refuge System, Fire Management Branch.

Wildland Fire Suppression and Management (9261)

All wildland fires on Fish and Wildlife Service lands will receive an Incident Number that is assigned through the Fire Management System (FMIS), Fire Occurrence Subsystem. These numbers will be Region specific and tracked within FFS as a project code.

Region	Incident Number
1	1010-1999
2	2010-2999
3	3010-3999
4	4010-4999
5	5010-5200, 5210-5300, 5310-5999
6	6010-6500, 6510-6999
7	7010-7999
9	9010-9999

When a Region reaches the end of its assigned numbers, the system is reset and incident numbers repeat themselves.

No differentiation is made by the financial system between on-refuge fires or interagency assistance off-refuge. Statistical tracking of these activities is maintained by the DI-1202 Fire Occurrence Report. All interagency wildland fire assistance actions will be charged to this subactivity with an Incident Number assigned through the Fire Management Information System.

Emergency Preparedness (9261)

During the wildland fire season there may be short-term weather events and increased human activity that increase the fire danger beyond what is normal. These types of occurrences cannot be planned or budgeted for as part of the normal fire season. Emergency preparedness planning may call for movement of additional firefighting resources into the area or lengthening the duty day to provide extended initial attack coverage. The duration of this type of event may be from one to a few days and can occur several times during the fire season. The triggering of emergency preparedness funding is documented in the refuge Step-Up Plan. It should not be confused with severity funding which is justified by prolonged environmental problems. Emergency preparedness is a short term

event.

The decision to use emergency preparedness funds is made at the refuge level with approval of the Regional Fire Management Coordinator. Authorization for use of emergency preparedness funding will be found in an approved refuge Step-Up Plan when staffing classes reach level 4 or 5. If a refuge Step-Up Plan is not complete, the RFMC will establish interim guidance for initiating emergency preparedness. Funding to cover these costs will come from the 9261 subactivity since the reason for incurring increased costs over what is normal is due to potential, unplanned risk. The frequency and use of emergency preparedness funding will be documented through the use of the following Region specific project numbers:

Region	Project Number
1	PE01
2	PE02
3	PE03
4	PE04
5	PE05
6	PE06
7	PE07

Organization code - 9261-PE0(X)

- Appropriate Uses
 - Appropriate management action taken on wildland fires and on prescribed fires that have exceeded prescription and have been declared a wildland fire.
 - Emergency preparedness actions carried out in response to an approved Step-Up Plan.
- Appropriate Expenditures
 - Regular time for other than 9251 or 9263 personnel, overtime and hazard or environmental premium pay for all personnel engaged in wildland fire management actions or support for these actions, or personnel involved in Step-Up Plan activities.
 - Travel and transportation costs associated with:
 - Positioning initial attack personnel, organized crews, overhead teams and aircraft in response to an approved Step-Up Plan.
 - Transportation of associated equipment and supplies.
 - Positioning of forces and response to a specific wildland fire.
 - Hiring of emergency firefighters until the additional workload created by the wildland fire event has been reduced to a level that can be managed with regular permanent and seasonal employees or to meet Step-Up Plan needs.
 - Supplies required for specific suppression actions.
 - Emergency equipment leases/contracts for the duration of a specific fire or to meet Step-Up Plan needs.
 - Aircraft costs associated with a specific fire or to meet Step-Up Plan needs.
 - Repair and maintenance of equipment used on a fire.
 - Replacement of equipment destroyed or consumed on a wildland fire. Accountable equipment lost, damaged or destroyed on a wildland fire may be replaced only if it has been approved under Board of Survey procedures. When the Board of Survey has completed the investigation and made their final findings and determinations, the Report of Survey will be forwarded to the Fire Management Branch for review and subsequent approval by the Washington Office Reviewing Authority.
 - Meals and lodging directly related to wildland fire actions.
 - Travel and other costs associated with fire reviews.

- Documentation of fire extent and effects directly related to a specific wildland fire and carried out within one year of the date the fire is declared out.
- Emergency evacuations of visitors, residents, or other personnel at risk from a wildland fire.
- Payments to suppression cooperators under interagency agreements.
- Wildland fire cause determination and arson investigation.
- Damages to resources caused by suppression actions will be mitigated or repaired prior to complete fire demobilization when possible. Such actions are considered part of the suppression cost and are chargeable to the specific fire through the use of 9261 subactivity only.
- Damage or destruction to physical or capital improvements resulting from suppression actions should be charged against the specific fire through the 9261 subactivity. A rehabilitation plan is not required for damage resulting from suppression actions, but certain approvals and concurrences are required before repair. Documentation of the extent of damages and the circumstances are required.
- Costs associated with immediate actions taken to repair damages caused by direct suppression activities are included as direct charges to the fire. These include, but are not limited to, repair of firelines and fuel breaks; **authorized** replacement of improvements, facilities or structures that were damaged as a result of a suppression action. **Authorization** for replacement of improvements, facilities or structures damaged due to suppression actions are to be obtained by the Refuge Manager submitting a written request through the Regional Fire Management Coordinator to the Regional Director for approval. Depending upon the situation, a Board of Survey report may be required. The Service Fire Management Coordinator must concur with the request. The request should include a summary of circumstances leading to the loss or damage, proposed plan to replace or repair the damage and the actual cost or a valid cost estimate. A copy of the request will be forwarded to the Chief, National Wildlife Refuge System.
- A Claim for Damages Against the Government cannot be filed in any case.
- Prohibited Uses.
 - Accountable equipment, except as authorized by the Fire Management Branch. Accountable equipment lost, damaged, or destroyed on a wildland fire may be replaced only if there is an approved Report of Survey.
 - Base eight salaries, benefits and support for 9251 and 9263 funded personnel.
 - Costs associated with management actions not in the approved Wildland Fire Situation Analysis.

Severity Funding (9261)

Severity funding is escalated preparedness funding based on abnormally extreme fire potential. It includes any costs authorized in a severity funding request that is initiated by the Regional Director and approved by the Director, Fish and Wildlife Service. All charges in this category require use of an incident number assigned by the Fire Management Branch. See below for guidance on how to request severity funding.

Region	Incident Number
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Region 9	9100-9999
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- Appropriate Uses.
 - Funding is used to improve wildland fire initial attack response capability during potentially dangerous situations caused by infrequent climate or weather events such as extended drought or strong windstorms.
- Appropriate Expenditures.
 - Rental or lease of initial attack equipment.
 - Augmentation of existing fire suppression personnel.
 - Augmentation of normal initial attack capability that is included in the Fire Management Plan.

- Prohibited Uses.
 - Funding cannot be used to restore lost funding resulting from budget cuts or other reductions.
 - Funding cannot be used to meet needs identified in fire management plans which are not covered by normal funding.
 - Procurement of accountable equipment without Fire Management Branch approval.

Severity Funding Guidelines

Severity funding is escalated preparedness authorization when justified and approved based on an extended period of abnormal fire potential, and is used to meet increased preparedness demands. Emergency Preparedness funding is used to address short-term periods of abnormal fire potential and justified through a Step-Up Plan. The authorization for severity funding is provided to improve wildland fire initial attack response capability to potentially dangerous situations caused by infrequent climate or weather events such as extended drought or the accumulation of large amounts of dead and down fuels following wind or ice storms. The authorization is not provided to restore lost funding or to raise funding levels to meet needs identified in fire management plans not funded under regular preparedness funds. Funds are not transferred to the requesting unit, but an authorization to expend against a designated limit is given. Severity funding needs should be anticipated as early as possible to allow adequate time for request development and approval. All charges under this account require a project number assigned by the Service Fire Management Coordinator.

Criteria for Severity Authorization. Severity authorizations provide for essential preparedness forces and activates when:

Unusual weather and fire conditions result in the occurrence, or substantial threat of occurrence, of wildland fires with significant damage potential before or after the normal fire season identified in the refuge Fire Management Plan.

Weather conditions during the fire season result in a period of fire severity which is, or is anticipated to be, substantially higher than that which normally occurred during the base period used in fire program planning.

Authorization process. The Fire Management Officer in concert with the Regional Fire Management Coordinator will develop the severity funding package. Once the Regional Director approves the request, it will be sent to the Service Fire Management Coordinator. The SFMC will review the package and prepare a response within 48 hours for the Director's approval. The package will then be sent to the Washington Office, National Wildlife Refuge System for a **one-week** approval process. The package will be hand carried to the Chief, National Wildlife Refuge System, The Assistant Director - Policy, Budget and Administration and the Director. It is the responsibility of each Assistant Director to ensure that the appropriate Divisions be included in the review and approval process.

Request content. Requests for changes in hiring dates and/or fire severity authorization shall include the following:

A brief narrative statement giving the purpose for the change, the fire problem that exists compared to the normal fire situation, and a description of resources that will be extended. The fire problem should be quantified using appropriate indices, such as the Burning Index, Energy Release Component or Ketch-Byram Drought Index, and other data as appropriate.

A statement of alternatives or adjustments that have been made within the Regional capability to help meet needs. This may include options such as additional fire personnel, equipment, detection flights, shifting of resources or funding within the Region.

Consequences if the request is not approved. These should include the threat to improvements, non-Service lands, resource damage incurred if additional wildland fires occur, and other impacts as appropriate.

Amount and proposed use of the requested authorization, including estimated costs, a schedule showing when additional preparedness resources would be hired or put into service, including FTE requirements.

Identify the criteria established at the local/Regional level to determine that the need for the additional authorization has ended.

Reporting Requirement. When expenditures are made against the severity authorization, the following information will be supplied on a monthly basis. This information will be transmitted through the Regional Fire Management Coordinator to the Service Fire Management Coordinator.

- Amount expended for the period and the purpose (salary, equipment rental, etc.).
- Balance of severity authorization remaining.
- Given potential changes in conditions, identify anticipated duration for continued use of the authorization.

Subactivity: 9262 - Emergency Rehabilitation

Fire damages as a result of wildland fires take two forms - suppression damages and resource damages. Suppression damages occur as a result of suppression operations, while resource damages are a result of the fire itself. Fire suppression activity damage rehabilitation is funded through the Suppression Operations Subactivity (9261).

Emergency stabilization and/or rehabilitation actions may be required to address resource damages if natural recovery will not achieve the refuge management objectives found in approved refuge management plans. A Burned Area Emergency Stabilization and Rehabilitation (ESR) Plan is used to justify and implement specific emergency stabilization and rehabilitation treatments. Funding for emergency stabilization treatments is provided for no more than two full growing seasons following control of the fire. Managers can shift base 8 personnel costs or back-fill in accordance with standard procedures for emergency stabilization planning or treatment implementation. Funding for rehabilitation treatments is provided for no more than three years following control of the fire. Managers cannot shift base 8 personnel costs or back-fill for rehabilitation planning or treatments.

All ESR Plans require approval by the Refuge Manager and the Regional Director that the emergency stabilization and rehabilitation treatments are compatible with and justified in refuge management plans. The Regional Fire Management Coordinator must concur that the plan fits the technical definition for use of Emergency Rehabilitation funds. Plans obligating more than \$500,000 of Emergency Rehabilitation funds are approved by the Chief, National Wildlife Refuge System.

The Fire Management Branch will be notified of all ESR Plan approvals in order to establish an implementation account. ESR planning costs will be charged to the organizational code - 9262 - fire number. ESR Plan implementation costs will be charged to the organizational code - 9262 - Rxxx (Rxxx being the individual rehabilitation implementation account established by the Fire Management Branch). Any per-approved emergency implementation costs charged to the organizational code - 9262 - fire number before the ESR Plan is approved and the implementation account established should be redistributed to the implementation account once it is established. An electronic copy of all approved ESR Plans will be forwarded to the Service Fire Management Coordinator within 10 days following approval for budgeting and tracking purposes.

Appropriate Uses. ESR actions to protect public safety, stabilize and prevent further land degradation and resource loss, repair and replace minor facilities damaged by the fire, and improve the land according to approved refuge management plans for up to 3 years following control of the fire are appropriate. All Emergency Rehabilitation funded treatments must be specified in an

approved ESR Plan.

Appropriate Expenditures

- Emergency Stabilization
 - Immediate post-fire fire damage assessments, planning emergency stabilization actions, and ESR Plan development.
 - Replacing or repairing facilities essential to public health and safety and replacing or constructing fences or other structures necessary to protect emergency stabilization projects or to prevent further degradation of natural and cultural resources during the project period.
 - Physical structures and devices to slow the movement of soil and water downslope (e.g., check dams, culverts, silt fences, log erosion barriers and straw wattles, erosion cloth and soil netting, etc.). These treatments are primarily temporary measures that do not generally require maintenance or are removed after objectives have been met.
 - Conducting fire damage assessments for threatened, endangered, and other special status species to identify mitigation requirements. Damage assessments and treatments are limited to species that are known to be detrimentally impacted by wildland fire, or those for which there is reasonable expectation of detrimental impacts. Also, there must be reasonable expectation that the detrimental impacts can be mitigated.
 - Seeding or planting of shrubs, forbs, and grasses to prevent critical habitat for federal listed threatened or endangered species, or other special status species, from being permanently impaired, or to prevent erosion or mass wasting.
 - Seeding or planting of shrubs, forbs, and grasses to facilitate the natural succession of vegetative communities that were largely composed of native species before the fire, but which would likely be subject to immediate and aggressive invasion of non-native invasive species after the fire.
 - Seeding or planting trees, only if such actions have been demonstrated to be cost-effective in meeting project objectives of stabilizing watersheds to prevent downstream damage on and off site.
 - Use of chemical, biological or mechanical treatments necessary to minimize the establishment or re-establishment of non-native invasive species within the perimeter of the burned area.
 - Monitoring and patrolling necessary for public safety and natural and cultural resource protection, if such activities cannot be accomplished within existing capabilities and by shifting priorities.
 - Covering, camouflaging, cleaning, burying, or reinforcing historic properties to prevent erosion, weathering, movement, and looting.
 - Fire damage assessments to assess damage to documented historic properties or those discovered in the course of treating known properties.
 - Base 8 salary of non-fire funded Service employees engaged in emergency stabilization planning and treatment implementation.
 - Overtime for Service employees engaged in emergency stabilization planning and treatment implementation.

- Rehabilitation
 - Planning post-fire rehabilitation actions and ESR Plan development.
 - Repair or improve lands unlikely to recover naturally from wildland fire damage by emulating historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved refuge management plans.
 - Restore or establish a healthy, stable ecosystem even if the ecosystem cannot fully emulate historical or pre-fire conditions.
 - Tree planting is limited to:
 - Facilitating the succession and stabilization of forest ecosystems.
 - Re-establishing habitat for federally listed threatened or endangered species, or other special status species.
 - Reintroducing or reestablishing native tree species and seed sources lost in a stand replacement fire.
 - Repair or replace fire damage to minor operating facilities (e.g., campgrounds, interpretive signs and exhibits, shade shelters, grazing fences, wildlife guzzlers, etc).
 - Overtime for Service employees engaged in rehabilitation planning and treatment implementation.

Prohibited Uses

- Emergency stabilization or rehabilitation treatments not in an approved ESR Plan.
- Emergency stabilization treatments carried out beyond the second growing season following control of the fire.
- Rehabilitation treatments carried out beyond three years following control of the fire.
- Treatment effectiveness monitoring after two years following control of the fire without submittal of an initial Accomplishment Report.
- Any treatment effectiveness monitoring after three years following control of the fire.
- The planning or replacement of major infrastructure, such as visitor centers, residential structures, administration offices, work centers, lookout towers, etc., without approval from the Department of the Interior Assistant Secretary, Policy, Management and Budget, or include the construction of new facilities that did not exist before the fire.
- Damages caused by prescribed fires or wildland fire used to achieve land management objectives.
- Monitoring to determine the short- or long-term response of a resource to the fire (i.e., fire effects monitoring).
- Purchase of accountable equipment.
- Base 8 salary of fire funded Service employees engaged in emergency stabilization actions.
- Base 8 salary of Service employees engaged in rehabilitation planning and treatment actions.

Subactivity: 9263 - Hazardous Fuel Reduction Operations Fuel Reduction Operations

The Hazardous Fuel Reduction Operations sub activity provides funding for prescribed fire and mechanical fuel reduction activities and includes the costs of ecological burning to reintroduce

the role of fire to the landscape. This program includes planning, implementation and support to fuel management activities including inventorying fuel hazards, analysis of treatment alternatives, determining and application of appropriate fuel treatment methods, and monitoring and evaluation of fuel treatment accomplishments. This includes application of wildland fire and mechanical treatments to protect, maintain, and enhance resources and reduce hazardous fuels.

Project ceilings must be identified and approved through the FIREBASE system. This is necessary to maintain fiscal integrity so that funds are only expended on hazardous fuels and resource enhancement prescribed fire management actions. The project definition portion of FIREBASE will be used to detail estimated costs for projects and to report actual costs incurred.

Personnel can be hired and paid from the 9263 account, subject to an approved Staffing Plan.

However, the positions that are appropriate for hiring under this budget authority must be dedicated fuels management positions with at least 80% of their time spent working on planning, preparing and implementing prescribed fires or other hazard reduction projects. Due to the close scrutiny that the 9263 subactivity expenditures will receive, all positions hired under this subactivity must have Regional Fire Management Coordinator concurrence prior to recruiting and filling. Any changes to the approved Staffing Plan must be submitted to and approved by the Chief of the National Wildlife Refuge System.

Overtime, premium pay, travel and per diem may be charged to this account. Travel must involve the movement of project and planning personnel directly working on hazardous fuels reduction projects, or for training associated with prescribed fire. Forces can be moved around the Region or between Regions to provide adequate resources to accomplish projects within planned prescription windows. Expendable supplies necessary for the planning and implementation of projects, such as office supplies, vehicle fuel and minor equipment repairs, may be charged to 9263.

Fire preparedness and suppression personnel (9251), Wildland Urban Interface Hazardous Fuels Reduction Operations (9264) and regular refuge (1260) personnel may charge overtime during actual project operations, but may not charge regular (base 8) hours against this account. Since these positions are already funded out of other accounts, cross charging for base 8 hours would constitute unauthorized augmentation of funds in their regular accounts.

This funding may be used to purchase capitalized equipment needed for the average annual workload that cannot be economically contracted or rented. Capitalized equipment costing less than \$2,500 may be purchased and charged to 9263-PROG if it can not be specifically charged to a project. The purchase of any capitalized equipment with a value greater than \$2,500 will require National Office approval. Approval will require a complete justification for the equipment, including the utility of the equipment (is it a piece of equipment specific to reducing hazardous fuels, such as a chipper) and a detailed explanation of why the work to be performed can not be contracted to a local business. The costs of replacing equipment destroyed while working on a project may also be included within the cost of the project 9263-XXXX and will require a board of survey action.

Aircraft costs, such as flight time for aerial ignitions, may be charged to 9263 when they are the result of approved projects. Aircraft availability for preparedness should continue to be charged to 9251.

Hazardous fuels management effectiveness monitoring costs can be charged to 9263. The purpose of fuels management effectiveness monitoring is limited to fuels structure and composition monitoring before and after treatment. Long term ecological or wildlife population monitoring must be charged to regular 1260 accounts. Because fuels management effectiveness monitoring is not an emergency, Base 8 personnel costs or costs associated with back filling personnel cannot be funded. Overtime costs may be authorized in exceptional cases only.

Cost accounting for Hazardous Fuels Reduction Operations will be accomplished by assigning a project code to all projects. Refuge fund ceilings will be identified through FIREBASE and rolled into a Regional ceiling. The DI-1202 reporting system number will be used as the project code for specific fuels treatment costs. Planning and program management costs not directly associated with individual burns will be charged against OVHD (Overhead) and/or PROG (Program).

Interagency assistance across agency boundary lines for wildland urban interface fuels treatments can also be charged to 9263. All direct costs associated with a cooperative effort on another federal agency's property are appropriate, including travel and per diem. Agencies will not cross bill for these expenses. Amounts obligated for these purposes will not be counted against the station's or Region's fund ceiling. The project code to charge these activities is 9263-IARX.

Travel and training costs associated with program administration/implementation will be charged to TNTV. Any travel associated with a specific project will be charged to the assigned project number.

Lumped charging should be kept to a minimum. It is important that our costs under 9263 be tracked

in detail, and it is especially important that treated acres are tied to expenditures. One of the figures that is continually sought is the cost per acre.

The Administratively Determined Pay Rate Authority for hiring emergency firefighters has been amended within Interior to include AD (Emergency Fire Fighter) use on prescribed fires. The term of hire is restricted to no greater than 300 hours per year per person for emergency hazardous fuel reduction work. The authority can only be used for direct treatment activity, and may not be used to augment regular operations and maintenance or other duties.

- Appropriate Uses ([Exhibit 1-6-1](#)). Prescribed fire and mechanical fuel reduction activities; and includes the costs of ecological burning to reintroduce the role of fire to the landscape.
- Appropriate Expenditures
 - Overtime may be charged to 9251 and non92XX accounts during preparation and burning operations. However, the 9263 subactivity was created especially to cover the costs for prescribed fire during all phases.
 - The base 8 hours will either be charged to a specific project number while on a burn or be charged to an alpha code. OVHD will be the most common code used. Training and travel time to a site to do a series of prescribed fires where travel costs cannot be assigned to a specific burn can be charged to TNTV. General planning or other work which can not be assigned to a specific project number should be charged to OVHD.
 - Travel must involve the movement of holding forces, ignition forces and/or planning personnel directly working on prescribed fires, or for training associated with prescribed fire. Prescribed burning crews and overhead personnel can be moved around the Region or between Regions to provide adequate resources to accomplish prescribed fires. Project numbers will be used where costs can be attributed to a specific burn, otherwise costs will be coded to TNTV.
 - Equipment valued at less than \$2500 can be purchased with 9263 funds. Purchase must be limited to small items which are required to execute projects and for basic equipment of burn crews, such as chain saws, tools, portable pumps, and Nomex, etc.
 - Equipment may be leased or rented for prescribed fire operations. Equipment leases charged to 9263 will be charged during the normal prescribed fire season for the area. Aircraft costs, flight time for aerial ignitions, and flight hours for contract aircraft used in firing operations may be charged to 9263. Contract availability, if required, during the prescribed fire season will be charged against 9263 TNTV. Aircraft availability for preparedness will continue to be charged to 9251.
 - Contract costs for personnel, equipment, etc can be covered under any funding source including 9263. Typical costs would be the kind associated with a company that has organized to provide this service to wildland agencies. Contract costs for Rx burning should be charged to a specific fire number.
 - Training costs and travel associated with course development, attending training or completing task books can be charged to 9263. Service or NWCG prescribed fire training courses and appropriate suppression training required for prescribed fire operations is also covered. Base 8 costs will continue to be funded by the employee's normal funding source. Training costs will be coded to TNTV.
 - Expendable supplies necessary for the planning and implementation of projects, such as office supplies, vehicle fuel and equipment repairs, may be charged to the 9263 account. Those items which are identified in project descriptions and can be attributed to individual projects should be charged to the specific project numbers. Indirect, overhead costs resulting from multiple projects should be charged to TNTV.
 - The cost of [fuels management effectiveness monitoring](#) can be charged to 9263. The costs of pre and post treatment fuels management monitoring activities are charged to organizational code - 9263 - and to the individual fuels management project number. Costs for fuels monitoring in years 1, 2, 5, 10, and 20 following the treatment are charged to organizational code - 9263 - MONT.

- Assistance to other Federal agencies including direct costs, travel, per diem, with the same requirements as for Service prescribed fires. IARX (interagency prescribed fire) alpha project code will be used for cooperative assistance to another Federal wildland agency. Costs accrued under this project code will be tracked separately from the station's prescribed fire fund ceiling and not count as a part of the ceiling. All direct costs associated with a cooperative effort on another federal agency's property are appropriate, including travel and per diem. Agencies will not cross bill for these costs. A DI-1202 will be completed to track these efforts in the occurrence system. IARX should be noted in the comment section and Fire Type 49 should be indicated. Type 49 is the obsolete code for prescribed natural fires which no longer exist. Using this code allows separate tracking and query of interagency assists. Prescribed burn assistance to non-federal cooperators must be done under some type of a reimbursable agreement and should be assigned a specific reimbursable project number. IARX code does not apply. If you have a Memorandum of Understanding or agreement with a non-federal cooperator which obligates them to assist you on FWS land, and there will be an equitable exchange of resources and benefits, it may be appropriate to charge this action to IARX. There must be an exchange so that our program can be compensated for the expenditure of funds and time on non-federal lands. If hazard fuels are located immediately adjacent to the refuge, with some history of problems, and the adjacent landowner has no resources to reduce the hazard, nor the financial resources to contract mitigation actions it may be appropriate to take action to protect the refuge by reducing the hazard fuels. This should be a last choice option, if the local structural fire department can't do it or won't, and the problem can't be addressed by treating the refuge's side of the line only. There must be a written agreement with the landowner authorizing your actions, and a prescription and burn plan must be written and approved as for any other burn.
- Co-funding full-time fire personnel who have both preparedness and Rx responsibility. In some cases, full-time fire positions may be co-funded from 9251 and 9263 where the position responsibilities involve both preparedness and fuels management activities. Prior authorization must be granted by the appropriate Regional Fire Management Coordinator, and the specific position must be included in the Regional 9263 Staffing Plan. Personnel can be hired and/or paid using the 9263 account. However, the positions must be dedicated fuels management positions with at least 80% of their time spent working on planning, preparing and implementing prescribed fires and other fuels management projects. Due to the anticipated close scrutiny that the 9263 subactivity expenditures will receive, all fuels management positions hired under this subactivity must have Regional Fire Management Coordinator concurrence prior to recruiting and filling of these positions; and again, must appear in the approved Regional Staffing Plan. The fire management positions appropriate for hiring under this new budget authority would include Prescribed Fire Specialist, Fuels Management Specialist, Prescribed Fire Monitor, Range Technician (firefighter), Forestry Technician (firefighter), and in some cases an administrative support position may be justified by the FIREBASE analysis.
- Program oversight costs for 9263 funded personnel not attributable to a specific project, and co-funded 9251/9263 personnel program oversight not attributable to a specific project. Positions hired to perform oversight, support or supervisory duties will charge to a specific project number while directly involved in prescribed fire and fuels management activities otherwise costs will be coded to 9263 OVHD.
- Prohibited Uses.
 - Regular (base 8) hours for 9251 and regular refuge employees cannot be charged against the 9263 account. These positions are already funded out of other accounts and cross charging for base 8 hours would constitute unauthorized augmentation of funds in their regular accounts.
 - Long term ecological or wildlife population monitoring.
 - Fire effects studies on wildlife (individuals or populations).

Subactivity 9264 - Wildland Urban Interface

The Wildland Urban Interface Fuel Reduction Operations subactivity provides funding for prescribed fire and mechanical fuel reduction activities in the wildland urban interface. Mechanical or chemical projects which are specifically oriented to removal or reduction of Wildland Urban Interface fuels may also be funded.

The intent of the appropriation is to provide funding for wildland urban interface (WUI) fuel reduction operations on federal lands and adjacent non-federal lands. All Federally funded WUI projects will involve treatments that are at least partially on Federal lands and the portion that is on non-federal lands must be of benefit to the federal resources.

The Appropriation Authorization Language specifically emphasizes the use of contracts and grants as the preferred method to conduct activities under this subactivity. Force account may be used when contracts and grants are not feasible to use.

Project ceilings must be identified and approved through the FIREBASE system. This is necessary to maintain fiscal integrity so that funds are only expended on wildland urban interface management actions. The project definition portion of FIREBASE will be used to detail the estimated costs for projects and to report actual costs incurred.

Cost accounting for Wildland Urban Interface Fuel Reduction Operations will be accomplished by assigning a project code to all projects. Refuge fund ceilings will be identified through

FIREBASE and rolled into a Regional ceiling. The DI-1202 reporting system number will be used as the project code for specific fuels treatment costs. Planning and program management costs not directly associated with individual burns will be charged against OVHD (Overhead) and/or PROG (Program).

Interagency assistance across agency boundary lines for wildland urban interface fuels treatments can also be charged to 9264. All direct costs associated with a cooperative effort on another federal agency's property are appropriate, including travel and per diem. Agencies will not cross bill for these expenses. Amounts obligated for these purposes will not be counted against the station's or Region's fund ceiling.

Travel and training costs associated with program administration/implementation will be charged to TNTV. Any travel associated with a specific project will be charged to the assigned project number.

Lumped charging should be kept to a minimum. It is important that our costs under 9264 be tracked in detail, and it is especially important that treated acres are tied to expenditures. One of the figures that is continually sought is the cost per acre.

The Administratively Determined Pay Rate Authority for hiring emergency firefighters has been amended within Interior to include AD (Emergency Fire Fighter) use on prescribed fires. The term of hire is restricted to no greater than 300 hours per year per person for emergency hazardous fuel reduction work. The authority can only be used for direct treatment activity, and may not be used to augment regular operations and maintenance or other duties.

- Appropriate Uses ([Exhibit 1-6-2](#)): Prescribed fire and mechanical fuel reduction activities in the wildland urban interface.

- Appropriate Expenditures
 - Personnel can be hired and paid from the 9264 account, subject to an approved Staffing Plan. However, the positions that are appropriate for hiring under this budget authority must be dedicated wildland urban interface fuels management positions with at least 80% of their time spent working on planning, preparing and implementing prescribed fires or other hazard reduction projects. Due to the close scrutiny that the 9264 subactivity expenditures will receive, all positions hired under this subactivity must have Regional Fire Management Coordinator concurrence prior to recruiting and filling. Any changes to the approved Staffing Plan must be submitted to and approved by the Chief of the National Wildlife Refuge System.
 - Overtime, premium pay, travel and per diem may be charged to this account. Travel must involve the movement of project and planning personnel directly working on wildland urban interface fuel reduction projects, or for training associated with prescribed fire. Forces can be moved around the Region or between Regions to provide adequate resources to accomplish projects within planned prescription windows. Expendable supplies necessary for the planning and implementation of projects, such as office supplies, vehicle fuel and minor equipment repairs, may be charged to 9264.
 - Fire preparedness and suppression personnel (9251), Hazardous Fuels Reduction Operations (9263) and regular refuge (1260) personnel may charge overtime during actual project operations, but may not charge regular (base 8) hours against this account. Since these positions are already funded out of other accounts, cross charging for base 8 hours would constitute unauthorized augmentation of funds in their regular accounts.
 - This funding may be used to purchase capitalized equipment needed for the average annual workload that cannot be economically contracted or rented. Capitalized equipment costing less than \$2,500 may be purchased and charged to 9264-PROG if it can not be specifically charged to a project. The purchase of any capitalized equipment with a value greater than \$2,500 will require National Office approval. Approval will require a complete justification for the equipment, including the utility of the equipment (is it a piece of equipment specific to reducing hazardous fuels, such as a chipper) and a detailed explanation of why the work to be performed can not be contracted to a local business. The costs of replacing equipment destroyed while working on a project may also be included within the cost of the project 9264-XXXX and will require a board of survey action.
 - Aircraft costs, such as flight time for aerial ignitions, may be charged to 9264 when they are the result of approved projects. Aircraft availability for preparedness should continue to be charged to 9251.
 - Wildland urban interface fuels management effectiveness monitoring costs can be charged to 9264. The purpose of fuels management effectiveness monitoring is limited to fuels structure and composition monitoring before and after treatment. Long term ecological or wildlife population monitoring must be charged to regular 1260 accounts. Because fuels management effectiveness monitoring is not an emergency, Base 8 personell costs or costs associated with back filling personnel cannot be funded. Overtime costs may be authorized in exceptional cases only.
 - Information and Education Workshops, mitigation activities including public distribution of pamphlets/brochures, etc.
 - Homeowner and Community action projects.
- Prohibited Uses
 - Regular (base 8) hours for 9251 and regular refuge employees cannot be charged against the 9264 account. These positions are already funded out of other accounts and cross charging for base 8 hours would constitute unauthorized augmentation of funds in their regular accounts.
 - Ecological restoration projects.
 - Long-term fire effects monitoring.
 - Projects not benefiting Federal lands.

Subactivity 9265 - Rural Fire Assistance

The Rural Fire Assistance Program is designed to increase firefighter safety and enhance the fire protection capabilities of rural fire departments. These goals will be achieved by assisting those departments in meeting or exceeding accepted standards of wildland fire qualifications, training and performance. Emphasis is placed on departments that protect rural communities, play a substantial cooperative role in the protection of Federal lands, and are associated with Department of the Interior managed lands.

In order to enhance the effectiveness of fire protection on public lands, the Federal Government may provide technical assistance, training, supplies and materials, equipment, and participate in interagency prevention and educational activities and proficiency exercises on a cost-share basis. This includes Federal costs associated with supplies and materials, equipment, travel, overtime and premium pay associated with project implementation.

Implementation: Regions and field stations will enter into agreements that will pass these monies to rural fire departments. In writing the project management plan section of the agreement, the process of passing the money to rural fire departments could include going through the State Forester. Either way, coordination must occur with the State Foresters. In order for the monies to be passed to a local fire department, an agreement specifically outlining the roles and responsibilities of each agency must be signed and approved. A contracting officer or a person with the equivalent delegated authority must be involved in the process. The National Fire Plan Contracts/Assistance Agreements working group developed a model agreement to provide assistance to rural fire departments. [This agreement will be available on the National Fire Plan web site.](#)

Priorities are established by the local bureau/unit, based on local needs in consultation with rural fire department(s). They are again prioritized at the Regional level, as there may be many more requests than available funding. Should additional funding become available, further projects may be readily approved from the existing priority list.

Contracting for services is an important component to this program. Rural fire departments can utilize this funding to contract out for services which would meet the objectives of this program. An example of services that potentially may be contracted include:

- Wildland fire training.
- Technical wildland fire expertise in planning, prevention, and educational activities.
- Purchase of equipment, supplies, and materials.

Program Administration: The following criteria will be used to determine suitable Rural Fire Assistance projects. They do not represent a long-term or continuing commitment of funding. The departments targeted in this program may or may not be identified as a "Wildland Urban Interface Community."

Eligibility Criteria -for a department to participate in the program.

- Statewide agreement with the State Forester who maintains cooperative fire agreements with the RFDs/VFDs or a cooperative fire agreement with an Interior bureau.
- Rural fire department serving a community of a population of 10,000 or less in the wildland/urban interface.
- Funding request is limited to training, equipment, and prevention activities.
- The rural fire department must have the capability to meet cost share at a minimum of 10 percent (which may include in-kind services).

Evaluation Criteria -for use of designated evaluator to rank eligible rural fire departments for fund allocation.

- Determine each department's frequency of responses to wildland/urban fire incidents in local area. Evaluate these frequencies against other applicants.
- Evaluate the department's wildland prevention and education program needs relative to the other applicants.
- Evaluate the department's training program needs relative to the other applicants.
- Evaluate the communities' and DOI's values to be protected relative to other applicants.
- Evaluate the percentage of wildland/urban lands relative to the other applicants.
- Determine the number of wildland fire engines in the department relative to the percentage of wildland/urban interface acres protected.

Coordination/Consultation: To ensure consistency and compatibility with existing rural fire assistance programs, Interior bureaus will work with State Foresters to coordinate funding of RFDs/VFDs to ensure funding is allocated to appropriate departments.

Coordination and consultation with all partners is an important component of this program. Affected partners, including local and State officials, should be included in the priority setting process and in developing community-wide action plans and objectives. In areas where several Federal partners exist or where multiple projects may be accomplished, a lead Federal agency should be identified as a primary point of contact for each fire department or a group of departments. Monies from more than one source can be utilized to assist a department, but one agency should have the lead in coordinating Interior's assistance. This will help reduce confusion and multiple points of contact for the assisted departments.

Performance Report/Monitoring: It is important to track our accomplishments in assisting local departments; we are required to report back to Congress on these accomplishments on a quarterly basis. Field stations will track their accomplishments and report them to Regional Offices. A form ([last page of Department implementation memo](#)) has been developed for interagency use that will provide the necessary information to track our accomplishments.

The National Fire Plan web site will serve as the clearing house for assistance to Rural Fire Departments. The web site should contain information on what department is being assisted, type of assistance being provided, and which bureau is providing the assistance.

Administrative Conditions: There are some program restrictions on the use of these dollars. They cannot be used to pay salaries for Government employees. The primary use of funds will be those identified in the appropriation language. A maximum allowable Federal contribution of \$20,000 per Rural Fire Department per year has been established. The basis of cost share will not exceed 90/10 percent, with a smaller percentage being cooperator responsibility. Cooperators' contribution may be in the form of in-kind service.

Incident Numbers

Emergency Operations (9261): Wildland fire suppression on or off FWS property and emergency preparedness on FWS property.

Each incident is assigned a four digit sequential fire number for specific tracking. This number is generated by the Fire Management Information System Fire Occurrence subsystem. The complete fire number consists of the organization code, followed by the sequential numbers for that Region. The actual format for an FWS incident number might be:

41570-9261-4087

where 41570 is the organization code for Merritt Island Refuge, 9261 is the cost code identifying wildland fire, 4087 is the sequentially assigned number (with the first digit (4) being the FWS Region).

9262 Emergency Rehabilitation funds must be tied to a specific fire number. Following the example

above, if emergency rehabilitation were necessary, the code would look like this:

41570-9262-4087

where the same sequential incident number is used to track rehabilitation costs associated with this fire.

9263 Hazardous Fuel Reduction Operations works just like wildland fire, with a sequential number from FMIS identifying the specific prescribed fire.

Cost Coding and Incident Numbers

Incident numbers are generated by the Fire Management Information System. Within the FWS, this number then becomes the only incident number used for statistics and finances. The numbers generated by the computer will be sequential by Region. For example, Region 1 will be assigned 1010 - 1999, Region 2, 2010 - 2999, etc. A new series of numbers will not be started over at the beginning of new fiscal year. Instead, each series will continue until the last number in the block is assigned, i.e., 3999. The numbering will then start over again for the Region.

A brief email message should be sent to the Denver Finance Center to the attention of Kim Johnson when an incident number is first opened. The message should request that the number be activated in the financial system. Send the message with a return receipt requested, as this will be the only acknowledgment given.

For accounting purposes the incident number becomes a project code. Any Service employee assigned to work this fire will charge to this number using their home station organization code.

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Exhibit 1-6-1: GUIDELINES FOR MANAGEMENT OF 9263 FUNDING AUTHORITY

[Back](#)

Following the time-line established by the National Office, the field will submit 9263 budget requests and requests for individual fuel treatment projects in priority order through the FIREBASE system. The Regional Fire Management Coordinator (RFMC) will review, revise as necessary, and approve specific funding for each project. OVHD will be WAG'd by the RFMC to the field. Specific project costs will not be WAG' d, but the RFMC will provide the Refuge Manager with the approved amount of each project. The amount of each fuel management project WAG' d is a ceiling which can not be exceeded without the approval of the RFMC." The approved fuel management (9263) projects in FIREBASE will authorize funding. Based on the requests and the approved projects, the RFMC will develop a 9263 staffing plan for the Region and submit it to the Service Fire Management Coordinator for approval.

OVERHEAD: 9263-OVHD

OVHD will be used only for salary of personnel identified and approved on the Region's 9263 Staffing Plan.

Temporary 9263 employee labor costs will be charged to projects.

All AD (Emergency Fire Fighter) labor costs, including training and fitness testing, must be charged to a prescribed fire project. Managers should charge the costs of training and fitness testing to the first major project the AD's work on. The use of AD's on mechanical projects is not permitted. Refer to the AD Pay Plan for conditions of hire.

EXAMPLES:

When 9263 funded personnel go to another FWS unit to help with a treatment, all their costs are charged to the project code established at the host Refuge. The host Refuge is the Refuge conducting the treatment.

When OVHD is used, the employee's home station Organization Code is to be used.

When a Project Code is charged, the Organization Code of the Refuge funding the fuel treatment project is to be used.

It is OK to split costs between more than one project.

TRAVEL COSTS: 9263- TNTV

TNTV will only be used for travel, tuition, and other training related costs (supplies and materials) associated with hazardous fuel reduction related training, attendance at related meetings, and for other administrative travel related to the program not attributable to a specific project. **(Base-8 and other labor costs, other than the exception noted above for AD employees, will not be charged to TNTV.)**

Project related travel (planning, preparation, implementation, monitoring) will be charged to a specific project (9263-XXXX). In the case of travel related to multiple projects, all costs can be charged to one account or project. Training costs to be charged to 9263 must be identified in

FIREBASE submissions and approved by the RFMC in the same manner other fire related funding is identified and approved.

EXAMPLES:

An employee is participating in a Regional Fire Management meeting. Their Base-8 is paid by the home unit under their normal account. Their travel costs are charged to TNTV.

PROGRAM RELATED COSTS: 9263-PROG

PROG, will track the routine, non-labor cost of doing business that are not attributable to a specific project. These costs will be identified and justified as part of the FIREBASE submission process. Permanent change of station cost can be identified under this Project Code at the Regional Office level. The funds would be retained and administered by the RFMC.

Some of the suggested items that could be included are: Routine maintenance of equipment purchased with 9263 funds, physical examinations, fuel, long-term leases not chargeable to a specific project (vehicles, etc.) and equipment under \$2,500 not chargeable to a specific project. Purchase must be limited to small items which are required to implement projects and for basic equipment for project crews, such as chain saws, tools, portable pumps, and Nomex, etc.

Operational costs including those for rented/leased equipment, supplies and equipment used, equipment or supplies lost or damaged on a project, equipment maintenance and repairs, and equipment under \$2,500 attributable to a specific project will be charged to that project.

Equipment may be leased or rented for wildland urban interface treatment operations. Equipment leases should be charged to specific 9263 projects whenever feasible. Aircraft costs, flight time for aerial ignitions, and flight hours for contract aircraft used in firing operations may be charged to 9263. Contract availability, if required, will be charged against 9263-PROG.

Subject to any limitations noted above, project costs associated with planning and implementing specific projects will be charged to 9263-XXXX. Costs attributable to a specific project would be base 8 salaries for temporary and AD employees (note that AD employees cannot be used on mechanical projects), overtime and premium pay, any travel associated with planning and implementing the project, supplies and equipment specific to that project, and pre- and posttreatment fuels management monitoring. Base 8 salary for personnel already covered by another salary code (9251, 9264, 1261, etc) normally will not be charged to a project code.

EXAMPLES:

An employee is dispatched from his home unit to another FWS unit to assist with the implementation of a project. All associated travel costs would be charged to the project code established for that project.

An employee is dispatched from his home unit to another FWS unit to assist with the implementation of three projects. All associated travel costs could be charged to a project code established for one of the projects or the costs could be prorated over all three projects.

ASSISTANCE TO OTHER FEDERAL AGENCIES: 9263-IARX

Costs for assisting other Federal agencies, including base-8 for 9263 funded employees, premium pay for non-9263 and 9263 funded employees, travel and other direct costs, may be charged to

IARX. The use of the IARX code allows separate tracking and query of interagency assists. Costs accrued under this Project Code will be tracked separately from the station's project funding ceiling and not count as a part of a Refuge's ceiling.

FUELS MANAGEMENT EFFECTIVENESS MONITORING

See FWS Fire Management Handbook 2.2.4 for further information.

It is appropriate to use Hazard Fuel Reduction Operations (subactivity 9263) funding to facilitate adaptive management when evaluating fuels management program and project effectiveness, and to ensure that refuge resource management goals and objectives are not compromised by the

fuels management projects. The use of 9263 funds is limited to monitoring the first and second order effects of fuel management projects (prescribed fires, mechanical or chemical fuel treatments, etc.) on fuel and wildlife habitat composition and structure, as recognized and well described as measurable objectives in the approved refuge Fire Management Plan and/or an approved refuge habitat management plan. Monitoring is limited to before and after treatment and at 1, 2, 5, 10, and 20 year after treatment intervals.

Although funding wildlife population inventories or fire effects research or management studies on wildlife is not an appropriate use of 9263 funds, evaluating fuel management treatment effects on wildlife habitat composition and structure is intended to complement these inventories, management studies and research projects. Because fuels management effectiveness monitoring is not an emergency, Base 8 personnel costs or costs associated with back filling personnel or personnel overtime costs cannot be funded.

The costs of pre- and post- treatment fuels management monitoring activities are charged to the individual fuels management project number (9263-XXXX).

MECHANICAL PROJECTS

To better track costs, the MECH project code will be replaced by a Region specific code: MEC1 for Region 1, MEC2 for Region 2, MEC3 for Region 3, *et sequel*. This code will be established by the RFMC. All costs that could be charged to a prescribed fire project apply.

A Mechanical project is one where mechanical or chemical treatment is necessary to reduce the fuels as a precursor to the introduction of fire. This funding authority could also be used for projects involving cutting and chipping to reduce hazardous levels of fuel.

SPECIFIC EXAMPLES:

- In a case where the fuels are to be treated using mechanical means and then later burned, two projects are entered into FIREBASE. The acres treated mechanically are reported through a accomplishment report. The acres burned are also reported separately through the fire occurrence system. Rational: If we are making smoke, we'd better file a 1202.
- In the case where the fuels are pre treated using mechanical means and will be burned later in the same fiscal year, two separate projects will be identified and submitted through FIREBASE. If the pretreatment using mechanical means is scheduled to take place in one fiscal year, and the unit burned the next fiscal year, only the mechanical project would be entered into FIREBASE the first year. The prescribed fire treatment would be requested the following fiscal year.

ADMINISTRATIVE CONCERNS

The RFMC will review, prioritize, and approve the project funding level and will send a list of approved projects to the field. Approved project ceilings are targets that may not be exceeded.

Emergency projects can be submitted after the FIREBASE budget call is concluded. The project is evaluated and approved using the same process. The new project can simply replace an existing fuel management project or be added to the approved list of projects, at the discretion of the RFMC. Unit priorities may have to be re-established as part of the approval process.

When it is necessary to use 9263 funded employees during wildland fire suppression activities, the employee's Base-8 should be changed to 9261. The project code for the fire will be used (Organization Code-9261-XXXX). Premium pay and travel will also be charged to the same project code for the wildfire.

If an employee assisting with a prescribed burn or mechanical project is fully funded out of 9251 or O&M, the Base-8 is charged to their regular account. The remainder of the costs will be charged to the project.

Long term ecological or wildlife population monitoring cannot be charged 9263.

To report Hazardous Fuels Reduction project accomplishments in FMIS, use fire type 48.



Exhibit 1-6-2: GUIDELINES FOR MANAGEMENT OF 9264 FUNDING AUTHORITY

The budgeting process will remain the same as for 9263. Following the time-line established by the National Office, the field will submit their 9264 budget requests and requests for individual fuel treatment projects in priority order through the FIREBASE system. The Regional Fire

The Regional Fire Management Coordinator will review, revise as necessary, and approve specific funding for each project. The amount of each fuel management project WAG' d is a ceiling which can not be exceeded without approval from the RFMC. Based on the requests and the approved projects, the RFMC will develop a 9264 staffing plan for the Region and submit it to the Chief of the National Wildlife Refuge System for approval.

Back

OVERHEAD: 9264-OVHD

OVHD will be used only for salary of personnel identified and approved on the Region's 9264 Staffing Plan.

Temporary 9264 employee labor costs will be charged to projects.

All AD (Emergency Fire Fighter) labor costs, including training and fitness testing, must be charged to a prescribed fire project. Managers should charge the costs of training and fitness testing to the first major project the AD's work on. The use of AD's on Mechanical projects is not permitted. Refer to the AD Pay Plan for conditions of hire.

EXAMPLES:

When 9264 funded personnel go to another FWS unit to help with a treatment, all their costs are charged to the project code established at the host Refuge. The host Refuge is the Refuge conducting the treatment.

When OVHD is used, the employee's home station Organization Code is to be used.

When a Project Code is charged, the Organization Code of the Refuge funding the fuel treatment project is to be used.

It is OK to split costs between more than one project.

TRAVEL COSTS: 9264- TNTV

TNTV will only be used for travel, tuition, and other training related costs (supplies and materials) associated with wildland urban interface treatment related training, attendance at related meetings, and for other administrative travel related to the program not attributable to a specific project. (Base-8 and other labor costs, other than the exception noted above for AD employees, will not be charged to TNTV.)

Project related travel (planning, preparation, implementation, monitoring) will be charged to a specific project (9264-XXXX). In the case of travel related to multiple projects, all costs can be charged to one account or project. Training costs to be charged to 9264 must be identified in FIREBASE submissions and approved by the RFMC in the same manner other fire related funding is identified and approved.

EXAMPLES:

An employee is participating in a Regional Fire Management meeting. Their Base-8 is paid by the home unit under their normal account. Their travel costs are charged to TNTV.

PROGRAM RELATED COSTS: 9264-PROG

PROG, will track the routine, non-labor cost of doing business that are not attributable to a specific project. These costs will be identified and justified as part of the FIREBASE submission process. Permanent change of station cost can be identified under this Project Code at the Regional Office level. The funds would be retained and administered by the RFMC.

EXAMPLES:

Some of the suggested items that could be included are: Routine maintenance equipment purchased with 9264 funds, physical examinations, fuel, long-term leases not chargeable to a specific project (vehicles, etc.) and equipment under \$2,500 not chargeable to a specific project. Purchase must be limited to small items which are required to implement project~; and for basic equipment for project crews, such as chain saws, tools, portable pumps, and Nomex, etc.

Operational costs including those for rented/leased equipment, supplies and equipment used, equipment or supplies lost or damaged on a project, equipment maintenance and repairs, and equipment under \$2,500 attributable to a specific project will be charged to that project.

Equipment may be leased or rented for wildland urban interf, lce treatment operations. Equipment leases should be charged to specific 9264 projects whenever -feasible. Aircraft costs, flight time for aerial ignitions, and flight hours for contract aircraft used in firing operations may be charged to 9264. Contract availability, if required, will be charged against 9264-PROG.

The purchase of any capitalized equipment with a value greater than \$2,500 will require National Office approval. Approval will require a complete justification for the equipment, including the utility of the equipment (is it a piece of equipment specific to reducing hazardous fuels, such as a chipper) and a detailed explanation of why the work to be performed can not be contracted to a local business.

Certain considerations to the purchase of capitalized equipment exist.

First and foremost, the intent of Congress is to contract WUI projects to the maximum extent possible. To this end, the equipment purchased must not be used to supplant the use of local contractors. In other words, every acre that can be placed under contract should be placed under contract. Equipment purchased by the government must be used to exceed what normally would be accomplished by contracting alone. One thought is this...many contractors do not have the proper equipment to do what we want them to do. Our purchasing the equipment, and their operating it on WUI projects should meet the intent of what we are supposed to do. One region is contracting at a cost of 2 or maybe 3 times what they feel they could do the work force account. Under the current administration's attitude about contracting, this is well within the realm of acceptable.

Next, the purchase of equipment must not interfere in the accomplishment of any project scheduled for the FY. In other words, a project cannot be delayed so funds may be used to purchase the equipment.

Next, the equipment purchased must be equipment which is essentially single purpose in nature, and dedicated to hazardous fuels reduction. Examples are a roller chopper, a chipper, or a chipper/mulcher. Vehicle purchase to accommodate a WUI position will be acceptable also.

Approval for the purchase of capitalized equipment with a value in excess of \$2500 will remain with the National Office, and will require a written request for approval to the National Office. The request to purchase equipment must address the items/considerations listed above.

PROJECT RELATED COSTS: 9264-XXXX

Subject to any limitations noted above, project costs associated with planning and implementing specific projects will be charged to 9264-XXXX. Costs attributable to a specific project would be base 8 salaries for temporary and AD employees (note that AD employees cannot be used on Mechanical projects), overtime and premium pay, any travel associated with planning and implementing the project, supplies and equipment specific to that project, and pre- and post treatment fuels management monitoring. Base 8 salary for personnel already covered by another salary code (9251, 9263, 1261, etc) normally will not be charged to a project code.

An employee is dispatched from his home unit to another FWS unit to assist with the implementation of a project. All associated travel costs would be charged to the project code established for that project.

An employee is dispatched from his home unit to another FWS unit to assist with the implementation of three projects. All associated travel costs could be charged to a project code established for one of the projects or the costs could be prorated over all three projects.

ASSISTANCE TO OTHER FEDERAL AGENCIES: 9264-IARX

Costs for assisting other Federal agencies, including base-8 for 9264 funded employees, premium pay for non-9264 and 9264 funded employees, travel and other direct costs, may be charged to IARX. The use of the IARX code allows separate tracking and query of interagency assists. Costs accrued under this Project Code will be tracked separately from the station's project funding ceiling and not count as a part of a Refuge's ceiling.

FUELS MANAGEMENT EFFECTIVENESS MONITORING

Until such time that an appropriate chapter is inserted into the FWS Fire Management Handbook, guidance concerning Fuels Management Effectiveness Monitoring may be gleaned from section 2.2.4 of the current handbook. This section is dedicated to the use of 9263 Hazardous Fuel Reduction Operations funding to facilitate fuels management effectiveness monitoring in hazardous fuels.

It is appropriate to use Wildland Urban Interface Fuels Reduction Operations (subactivity 9264) funding to facilitate adaptive management when evaluating fuels management program and project effectiveness, and to ensure that refuge resource management goals and objectives are not compromised by the fuels management projects. The use of 9264 funds is limited to monitoring the first and second order effects of fuel management projects (prescribed fires, mechanical or chemical fuel treatments, etc.) on fuel and wildlife habitat composition and structure, as recognized and well-described as measurable objectives in the approved refuge Fire Management Plan and/or an approved refuge habitat management plan. Monitoring is limited to before and after treatment and at 1, 2, 5, 10, and 20 year after treatment intervals.

Although funding wildlife population inventories or fire effects research or management studies on wildlife is not an appropriate use of 9264 funds, evaluating fuel management treatment effects on wildlife habitat composition and structure is intended to complement these inventories, management studies and research projects. Because fuels management effectiveness monitoring is not an emergency, Base 8 personnel costs or costs associated with back filling personnel or personnel overtime costs cannot be funded.

The costs of pre- and post- treatment fuels management monitoring activities are charged to the individual fuels management project number (9264-XXXX).

ADMINISTRATIVE CONCERNS

The RFMC will review, prioritize, and approve the project funding level and will send a list of approved projects to the field. Approved project ceilings are targets that may not be exceeded.

Emergency projects can be submitted after the FIREBASE budget call is concluded. The project is evaluated and approved using the same process. The new project can simply replace an existing fuel management project or be added to the approved list of projects, at the discretion of the RFMC. Unit priorities may have to be re-established as part of the approval process.

When it is necessary to use 9264 funded employees during wildland fire suppression activities, the employee's Base-8 should be changed to 9261. The project code for the fire will be used (Organization Code-9261-XXXX). Premium pay and travel will also be charged to the same project code for the wildfire.

If an employee assisting with a prescribed burn or mechanical project is fully funded out of 9251 or O&M, the Base-8 is charged to their regular account. The remainder of the costs will be charged to the project.

Long term ecological or wildlife population monitoring cannot be charged 9264.

To report WUI project accomplishments in FMIS, use fire type 44.



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[FMIS\]](#) [\[WIMS\]](#) [\[FMIS\]](#)



1.7 AUTOMATED INFORMATION SYSTEMS

1.7.1 INTRODUCTION

The interagency wildland fire management community has developed a significant array of computer applications which provide analysis and decision support for fire manager/resource manager. Numerous other computer applications exist which have merit and can be used by refuges, but are not supported by the national office.

The primary systems the Fish and Wildlife Service currently or will soon support for fire management are the Fish and Wildlife Service Fire Management Information System (FMIS), Weather Information Management System (WIMS), and the Fire Effects Information System (FEIS).

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Introduction](#)

[FMIS](#)

[WIMS](#)

[FMIS](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

1.7.2 FISH AND WILDLIFE SERVICE FIRE MANAGEMENT INFORMATION SYSTEM

The Fire Management Branch has established a time-sharing computer facility for refuges and Regions to dial-up and use a variety of fire management applications software developed by the Fish and Wildlife Service and other agencies. The computer system is menu-driven and designed to be user-friendly; it does not require significant computer expertise on the part of refuge users to effectively use the system.

The general applications provided to the refuges on this system include fire weather and occurrence, incident reporting, fire training, and aviation. Several of these applications provide or generate data used for FIREBASE and other national analyses. Some programs require periodic inputs by refuges and Regional Offices.

A User's Guide for the Fish and Wildlife Service Fire Management Information System and assistance for users of the system can be obtained from the Fire Management Branch.

FMIS Modules

FIREBASE	FIRE OCCURRENCE	MULTI-AGENCY TRAINING SCHEDULE	QUALIFICATION SYSTEM
Organization	Individual Fire Reports	Training Schedules	Employee Data Entry
Organizational Requests	Occurrence Summary Inquiries	Training Schedule Reports	Incident Qualification Cards
Regional Requests	Fire Occurrence Reports	Training Materials	Qualification Inquiries
Rx Projects	Historical Fire Reports		Qualification Reports

National Level			Certification/ Security Maintenance
Reports			Incident Staffing Needs

1.7.3 WIMS

The Weather Information Management System (WIMS) is an interactive, time-sharing application maintained by the U.S. Forest Service under contract with a private firm. Fish and Wildlife Service use of WIMS is primarily limited to weather station data entry, daily fire weather observations, and fire weather forecasts, but the system has many other useful features. Documentation for the system will be provided.

All time-sharing costs for use of WIMS are paid by the Fire Management Branch, while local communication costs are paid by refuges.

1.7.4 FIRE EFFECTS INFORMATION SYSTEM

The Fire Effects Information System (FEIS) is an expanding database of scientific information about the effects of fire on plant and animal species and ecological communities, and developed by the Intermountain Fire Sciences Laboratory in Missoula, Montana.

FEIS is currently available through dial-up modem connection and on the [World Wide Web](#) and updated periodically. Contact the Fire Management Branch for information on the FEIS.

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Refuge Records\]](#) [\[Situation Reports\]](#) [\[Fire Weather Rec.\]](#) [\[Fire Reports Rec.\]](#)



1.8 RECORDS AND REPORTS

1.8.1 PERMANENT REFUGE RECORDS

The following old records presently in the refuges should be held in the refuge as permanent historic resource management records:

- Fire reports (10-400, DI-1201, and DI-1202).
- Annual Narrative
- Fire weather records
- Historic records of the refuge, including any photographs showing vegetative cover, cover type maps, etc. Monthly reports or other files which may represent the only documentation of fire occurrence or fire behavior in the refuge.
- All other maps or records pertinent to fire management.

1.8.2 SITUATION REPORTS

Situation reports contain current information about fire danger, fire status, and resource availability.

Refuges with permanent fire staffs prepare daily situation reports during their official fire seasons. Those refuges, when outside of official fire season, and all other refuges, prepare situation reports under the following circumstances:

- Daily, when in very high or extreme fire danger.
- Daily, whenever a fire has occurred, is in progress, or is planned.
- Additionally, as required by Regions/zones.

It is preferable for reports to be completed by 1100 hours (Mountain Standard Time Zone) for compilation into interagency situation reports. In accordance with local or Regional procedures, refuges provide situation reports to local cooperators or interagency coordination centers.

Historic situation report files will be used in the FIREBASE prescribed fire monitoring needs analysis to monitor staffing requirements. For this reason it is especially important that refuges make daily entries for all wildland fires and prescribed burns.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Refuge Records](#)

[Situation Reports](#)

[Fire Weather Rec.](#)

[Fire Reports Rec.](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

1.8.3 FIRE WEATHER RECORDS

All refuges will maintain or reference fire weather stations, and record daily weather observations during their official fire seasons. Weather observations are entered directly into WIMS.

1.8.4 FIRE REPORT RECORDS

Each wildland fire and support action will have a fire report prepared and archived to document the fire incident. In the event that a prescribed fire does not meet established objectives, and/or exceeds its established prescription and is reclassified as an unwanted wildland fire, two separate reports are prepared. The narrative of the prescribed fire report should indicate that the fire was reclassified and reference the new assigned wildland fire number, and report only those acres burned within prescription. A new report is started for the newly declared wildland fire, and report acres burned from the point of reclassification to the declared out acres. The cause and narrative should indicate that the unwanted wildland fire resulted from a prescribed fire which was reclassified. All unwanted wildland fires caused by prescribed fires will be reviewed: see section 3.6.2 Fire Reviews - Prescribed Fire / Wildland Fire Review in the Wildland Fire Operations Chapter.

The Fish and Wildlife Service Fire Management Information System (FMIS) has an on-line data entry and editing application for direct entry of occurrence information. Refuges which have computer telecommunications capability will use the computer to file their reports, and retain the hard copy report on file in the refuge. Refuges without computers will forward one copy of each completed Fire Report to the appropriate data entry site assigned by the Regional Fire Management Coordinator for data entry.

Data entry begins at the time of the fire in order to get a fire number. The complete fire report is to be entered on the computer system within 10 days after the fire is declared out. Regional Offices will assure that all fire reports are entered into the Servicewide database. General Fire Reporting instructions can be found on the Fire Management Home Page.

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook



CHAPTER 2. PRESCRIBED FIRE MANAGEMENT

2.1 [INTRODUCTION](#) - Revised 3/17/00

2.1.1 [GOALS](#)

2.1.2 [AUTHORITIES](#)

2.1.3 [GENERAL PLANNING REQUIREMENTS](#)

2.1.4 [SUPPRESSION CRITERIA](#)

2.1.5 [PRESCRIBED FIRES RECLASSIFIED AS WILDLAND FIRES](#)

2.1.6 [REVALIDATION AND CERTIFICATION](#)

[Exhibit 2-1-1: GO/NO-GO CHECKLIST](#)

2.2 [PRESCRIBED FIRE OPERATIONS](#) - Revised 7/10/02

2.2.1 [REQUIRED PERSONNEL QUALIFICATIONS](#)

Thirteen prescribed fire situations that shout watch out!

2.2.2 [IGNITIONS](#)

2.2.3 [HOLDING ACTIONS](#)

2.2.4 [FUELS TREATMENT EFFECTIVENESS MONITORING](#)

2.2.5 [DEBRIS DISPOSAL](#)

2.2.6 [PRESCRIBED FIRE COMPLEXITY ELEMENT RATING CRITERIA](#)

[Exhibit 2-2-1: THIRTEEN PRESCRIBED FIRE SITUATION THAT SHOUT WATCH OUT!](#)

[Exhibit 2-2-2: FIREBASE COMPLEXITY ANALYSIS](#)

2.3 [AIR QUALITY AND SMOKE MANAGEMENT](#) - Revised 3/17/00

2.3.1 [INTRODUCTION](#)

2.3.2 [LEGAL AUTHORITIES AND RESPONSIBILITIES](#)

General Authorities for Air Resource Management

Clean Air Act (42 United States Code (USC) 7401 et seq.)

Fish and Wildlife Service Compliance Responsibilities

2.3.3 [INTER AND INTRA-AGENCY COORDINATION](#)

State Agency Coordination

Air Quality Branch (AQB) Coordination

Interagency and Regional Coordination

Public Coordination

2.3.4 [REFUGE RESPONSIBILITIES](#)

2.3.5 [SMOKE MANAGEMENT GUIDELINES](#)

General Guides

Principles

Screening System for Managing Smoke

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Goals\]](#) [\[Authorities\]](#) [\[General Planning\]](#) [\[Suppression Criteria\]](#) [\[Fire Reclassification\]](#) [\[Revalidation\]](#)



2.1 INTRODUCTION

Fire is an integral component of refuge ecosystems, and is actively managed within the Fish and Wildlife Service to achieve specific management objectives for over 50 years. Fire is used as a tool to accomplish resource management objectives. These objectives include, but are not limited to: enhancing wildlife and plant species and populations, reducing hazardous fuels, eliminating exotic/alien species, promoting biological diversity, preserving endangered species, and to accomplish basic maintenance needs such as disposal of vegetative waste and debris. Fire can remain a vital ecosystem process.

In all uses of prescribed fire, there are consistent management requirements. These include measurable objectives, qualified personnel, quantified ranges of conditions under which burns will be conducted, a description of actions which will be taken if these conditions are exceeded, a monitoring and documentation process and a review and approval process.

Although there are some risks to the use of prescribed fire, those risks are minimized by the implementation of these requirements. The failure to prudently use prescribed fire may carry significantly greater risks and long term ecological consequences than a fire program that does not employ prescribed fire.

2.1.1 GOALS

The goals of the Fish and Wildlife Service prescribed fire program are to:

- Conduct a vigorous prescribed fire program with the highest professional and technological standards.
- Identify the type of prescribed fire that is most appropriate to specific situations and areas.
- Efficiently accomplish management objectives through the application of prescribed fire.
- Continually evaluate the prescribed fire program to better meet program goals by refining prescription treatments and monitoring methods, and by integrating applicable technical and scientific advancements.
- Not allow prescribed fire to escape.

2.1.2 AUTHORITIES

The use of prescribed fire must be described and authorized in the refuge Fire Management Plan. An approved Fire Management Plan is required before a prescribed fire program can be implemented. All prescribed fires are subject to post fire review as described in section [3.6](#) Reviews in the Wildland Fire Management chapter.

A regionally designated agency administrator approves all Prescribed Fire Plans. Regions will establish a process to delegate Prescribed Fire Plan approval. Each Prescribed Fire Plan requires a regionally established review and concurrence process to include the responsible Burn Boss and regionally designated subject matter experts.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Goals](#)

[Authorities](#)

[General Planning](#)

[Suppression Criteria](#)

[Fire Reclassification](#)

[Revalidation](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

2.1.3 GENERAL PLANNING REQUIREMENTS

Each prescribed fire must have a complete and approved formal Prescribed Fire Plan before it is funded and can be implemented. The Prescribed Fire Plans should ideally be prepared and developed by an interdisciplinary team in which at a minimum at least one member has successfully completed the FWS Prescribed Fire Planning and Implementation or the NWCG Prescribed Fire Burn Boss training course. The Prescribed Fire Plan must discuss all key issues and concerns identified during refuge strategic and operational planning. The formal Prescribed Fire Plan is made up of many operational elements. Each element addresses a specific aspect of the prescribed fire operation. Certain key elements are listed below. If they do not apply, they should be noted as "N/A", they should not be omitted or not addressed. In some cases, special prescription elements, variables, or other requirements unique to the region or refuge will require additional entries. A standard Prescribed Fire Plan format is found in the Fire Management Preparedness and Planning chapter. Each regional office will determine whether the standard Prescribed Fire Plan format or a customized plan format will be used.

The following are key issues that **will** be addressed in all Prescribed Fire Plans.

- Prescribed burn objectives and how they support the land use objectives for the area.
- Expected fire behavior.
- Buffer and safety zones.
- Fire perimeter length and acreage burned limit.
- Analysis of the cumulative effects of weather and drought on fire behavior. This should include a historical analysis of a drought index (i.e., Palmer, Keetch_Bryan, ERC, etc.).
- Potential risks to and impacts on visitors, users, and local communities, both on and off site.
- Considerations of environmental, economic, and social effects, both on and off site.
- Regional and national fire activity are within planned limits.
- The number of fires burning in the planning area at one time are within planned limits.
- Items to be checked during the burn day go-no-go determination must include:
 - Predicted weather, environment, and fire behavior are within prescribed limits.
 - Availability of implementation personnel, contingency forces, equipment, and supplies are within planned limits.
 - Implementation personnel are briefed.
 - Required notifications are made.

The following are key Prescribed Fire Plan elements which will be in all Prescribed Fire Plans or other supporting documents:

- Signature page: Provide spaces for signatures of those persons who prepared the plan, the prescribed fire burn boss, the reviewers and the final approval authority.
- Burn unit description: Describe the physical and biological features of the burn unit including the location, topography, fuels, vegetation, slopes, and aspect.
- Vicinity map: Include an overall map showing the position of the project in relation to the surrounding geographical area.
- Project map: Provide a detailed map showing the project boundary, its topographic features, fuel types and/or loadings, potential hazards, areas of special concern, type and size of control line locations and ignition patterns.
- Goals and objectives statements: State the goals and objectives for this specific burn. They must include the prescribed burn objectives which should be measurable treatment objectives (i.e., tons per acre of fuel removed, percentage of plants killed, percentage of mineral soil exposed, etc.) that support the land use objectives..
- Complexity: Identify the degree of difficulty in executing the planned fire.
- Burn organization: List the essential qualified personnel who will be utilized and the positions that they fill. Specify the number of crew personnel that are needed.
- Costs: Estimate the time and costs for the following categories: planning, pre-burn monitoring, preparation for the burn, including line construction; burning; holding; monitoring; mop up; and evaluation. Estimate the costs of equipment used for the burn, including tools, aircraft, supplies, and vehicles.

- Scheduling: State the general time period in which the burn will take place. Show any periods during this time when the burn cannot take place. Provide space to enter the start date, date declared out, and date the DI-1202 is submitted.
- Pre-burn considerations:
 - Preparations on site: Include line to be built, line standards, snags to be felled or protected, equipment to be pre-positioned, special features to be protected, warning signs to be placed, weather recording and monitoring needs, etc.
 - Preparations off site: Include equipment readiness, supplies to be purchased, signs to be made, personal protective equipment to be issued, etc.
- Fire prescription: Describe in detail the acceptable ranges of fire behavior and parameters of weather and fuel moisture content or other site variables that are used to define the prescription, acceptable smoke duration and patterns of dispersal, seasons when the burns can be done, and other specific parameters. The use of fire behavior and smoke management prediction aids (e.g., BEHAVE, RXWINDOW, nomograms, SASEM, is recommended).
- Firing/holding plan: Describe in detail the methods and procedures to be used during the firing and how the lines are to be held. This should include the number and types of personnel, equipment, and assignments. Include day, night, and weekend shifts. What are acceptable holding actions on this fire? What constitutes an escape? (refer to "Holding Actions", section in this chapter).
- Contingency plan: Define what contingency actions constitute a significant departure from what was planned or expected and where conversion to a wildland fire is appropriate. Include procedures to be followed and actions to be taken if the fire exceeds the abilities of the holding crew to keep it within prescribed parameters and/or unit boundaries. Fuels both inside and outside (near and distant) the burn unit should be considered. Who is to declare the fire a wildland fire? Who is to be the incident commander after the fire is converted to a wildland fire? Define the number and type of contingency forces to be used as initial action. Who is to be notified of the conversion to a wildland fire? What role will the holding crew take? Should they remain on the burn or suppress the escape? Account for every person as either reassigned or released from the fire and identify who is to supervise those who are reassigned.
- Weather information: Specify the weather information required during all phases of the project and the procedures for acquiring it. How and when will spot weather and smoke dispersal forecasts be requested? How long after the burn will forecasts be required? How is feedback to the Weather Service to be accomplished?
- Protection of sensitive features: Give instructions for the protection of sensitive features within and adjacent to the burn. These include cultural resources, streams, threatened and endangered species, sensitive soils, buildings and improvements, etc. Obtain necessary archaeological and other types of clearances before the area is disturbed.
- Smoke management and air quality: Identify potential smoke sensitive areas and management strategies for avoidance, emission reductions, and/or dilution to minimize environmental impacts including impacts on human health and welfare. Identify what air quality compliance steps must be taken and what permits are required, who is to obtain them, and when they must do so.
- Pre-burn coordination and public involvement: Establish responsibilities for the notification of other agencies, the public, and local landowners, including the notifications and coordination required in the regional preparedness plan. List and identify public information contacts, including local area personnel and press releases. Identify the official local agency public information specialist.
- Pre-burn notification: Formulate a call-up list of individuals and agencies, when they are to be contacted, how they are to be contacted, and assign responsibilities for making specified contacts. Include addresses, phone numbers, radio call signs, and frequencies.
- Public and personnel safety: Describe safety and emergency procedures. Specify that all personnel who are within the active burn area will have the personal protective equipment required for fire management. Identify safety hazards on the burn, measures taken to reduce those hazards, and EMS personnel on the burn. Specify emergency medical procedures, evacuation routes, and emergency facilities to be used.
- Monitoring: Include all monitoring, measurements, and frequency needed to determine if conditions for the burn are within prescription, both before it is started and while it is burning. Describe the location of all sampling plots and transects. Include the necessary measurements and observations to determine if the burn objectives were met.

- Reports: Provide for the documentation of the burn. Include a cost assessment and all required reports such as the DI-1202. Include a critique of the burn by the prescribed fire burn boss. Methods which worked or didn't work and the effectiveness of the prescription in achieving burn or smoke objectives should be evaluated, along with recommendations for future projects. Attach all observation and forecast forms, worksheets and data collected during the burn operation.
- Rehabilitation: Describe in detail any rehabilitation that is to be accomplished, who is to do it, and when it is to be completed. These may include waterbars, trash removal, flush cutting of stumps, scattering or burning of line construction debris and other appropriate treatments.
- Briefing guide and NWCG format "Go/No-Go" checklist ([Exhibit 2-1-1](#)): A short, concise list of the things to be covered during the crew briefing before the fire is started and at the beginning of each operational period after that. Include a summary of conditions that must be met before the burn can commence and continue. These may include, but not be limited to, the presence of all personnel needed to implement the contingency plan, the presence of all required equipment in specified locations, that the fire behavior and expected weather meet the prescription, and that the required notifications have been made.
- Persons contacted: Retain a list of persons contacted during the development of the burn plan. Include Fish and Wildlife Service personnel, other agency personnel, concessionaires, inholders, special interest groups, refuge neighbors, concerned public, etc. Where appropriate record the date of contact.

2.1.4 SUPPRESSION CRITERIA

Prescribed fires in the refuge will be suppressed if they threaten:

- Human life and safety.
- Cultural resources or physical facilities of the refuge.
- To have a negative impact on threatened or endangered species.
- To escape from predetermined units or from the refuge, except where interagency agreements provide for certain fires to cross such boundaries.
- To exceed the prescription and/or cannot be successfully managed under the existing Prescribed Fire Plan.

The contingency section of each Prescribed Fire Plan should clearly define what contingency actions constitute a significant departure from what was planned or expected and where conversion to a wildland fire is appropriate.

2.1.5 PRESCRIBED FIRES RECLASSIFIED AS WILDLAND FIRES

Prescribed fires which exceed the limits of an approved prescription will be managed as unwanted wildland fires and handled under appropriate management response(s) as defined in the contingency section of the Prescribed Fire Plan or by the [Wildland Fire Situation Analysis](#). Once a prescribed fire has been declared an unwanted wildland fire, a Wildland Fire Situation Analysis will be completed to determine the appropriate management action to be taken. Once a prescribed fire has been reclassified to an unwanted wildland fire it cannot revert back to prescribed fire status.

All prescribed fires that are reclassified as unwanted wildland fires will be reviewed by the Refuge Manager or his or her designated representative. The purpose of the review is to determine why and under what circumstances the prescribed fire had to be reclassified. It will identify the circumstances leading to the reclassification of the fire, what actions were taken after reclassification, and possible future actions that need to be taken to avoid similar situations. A formal report will be made on all prescribed fires that are reclassified as unwanted wildland fires.

2.1.6 REVALIDATION AND CERTIFICATION

The Refuge Manager or the designated Acting Refuge Manager will certify in writing, daily,

(including weekends and holidays) for all prescribed fires not contained in the first burning period that:

- The prescribed fire is within prescription and is expected to remain in prescription for the next 24 hours.
- Adequate funds are available to manage the prescribed fire.
- Sufficient fire management resources have been assigned or committed to:
 - Manage the prescribed fire.
 - Implement the approved suppression alternatives.

While it is understood that the information for making this certification will be collected and compiled by the prescribed fire staff, the final, certifying signature must be the Refuge Manager's.

This page was last modified 07/02/03

[\[Disclaimer\]](#) | [\[Privacy\]](#) | [\[Copyright\]](#) | [\[USFWS Main Page\]](#) | [\[Webmaster\]](#)


[Back](#)


Exhibit 2-1-1: NWCG GO/NO-GO FORMAT CHECKLIST

NWCG PRESCRIBED FIRE

GO/NO-GO CHECKLIST

Yes	No	Questions	
<input type="checkbox"/>	<input type="checkbox"/>	Are ALL fire prescription elements met?	
<input type="checkbox"/>	<input type="checkbox"/>	Are ALL smoke management specifications met?	
<input type="checkbox"/>	<input type="checkbox"/>	Has ALL required current and projected fire weather forecast been obtained and are they	
<input type="checkbox"/>	<input type="checkbox"/>	Are ALL planned operations personnel and equipment on-site, available, and operational?	
<input type="checkbox"/>	<input type="checkbox"/>	Has the availability of ALL contingency resources been checked, and are they available?	
<input type="checkbox"/>	<input type="checkbox"/>	Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, and safety zones?	
<input type="checkbox"/>	<input type="checkbox"/>	Have all the pre-burn considerations identified in the prescribed fire plan been completed	
<input type="checkbox"/>	<input type="checkbox"/>	Have ALL the required notifications been made?	
<input type="checkbox"/>	<input type="checkbox"/>	Are ALL permits and clearances obtained?	
<input type="checkbox"/>	<input type="checkbox"/>	In your opinion, can the burn be carried out according to the prescribed fire plan and will it	
		objective?	

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results.

 Prescribed Fire Burn Boss

 Date

 Refuge Manager

 Date



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Personnel Quals.\]](#) [\[Ignitions\]](#) [\[Holding Actions\]](#) [\[Monitoring\]](#) [\[Debris Disposal\]](#) [\[Complexity\]](#)



2.2 PRESCRIBED FIRE OPERATIONS

2.2.1 REQUIRED PERSONNEL QUALIFICATIONS

All prescribed burns must be supervised by a qualified Prescribed Fire Burn Boss. Additionally, all positions on prescribed burns will meet all national FWS requirements for training and experience, as described in the section 1.5. Prescribed Fire Burn Boss will be qualified to conduct prescribed burns by specific fuel groups.

The position qualifications may be supplemented by regional or refuge requirements; they may not be less than national standards. Depending upon specific regional or local concerns (smoke management, types of fuels, proximity to values to be protected, public concern, etc.), additional standards may be required. If such supplemental qualifications are developed, it will be the responsibility of the region to fund the additional training requirements and experience.

Although the regionally designated agency administrator has final approval authority for the Prescribed Fire Plan, the Prescribed Fire Burn Boss along with the refuge manager has the responsibility to make the on-site, tactical, "go-no-go" decision. The Prescribed Fire Burn Boss ensures that all prescription, staffing, equipment, and other prescribed fire requirements are met before and during the burn. Deviations from the approved plan which result in an escape, injury, property damage or other consequence may result in personal liability.

Thirteen Prescribed Fire Situations That Shout Watch Out! ([Exhibit 2-2-1](#))

2.2.2 IGNITIONS

The type and circumstances of ignition must be defined in the Prescribed Fire Plan. An unplanned ignition occurring within a planned management ignited prescribed fire area can be managed as a prescribed fire only if such an ignition is addressed in the Prescribed Fire Plan and all other prescribed conditions within the plan are met. If not, an appropriate suppression action must be initiated on all human caused fires.

2.2.3 HOLDING ACTIONS

Holding actions must be defined in the Prescribed Fire Plan. Policy allows the Prescribed Fire Burn Boss to take limited holding actions on fire outside of the planned perimeter. **However, there must be defined limits on the amount and kind of holding that can be done before any fire is determined to have exceeded the approved plan and must be declared an unwanted and unplanned wildland fire.**

The limits of acceptable holding actions must be clearly stated in the Prescribed Fire Plan. These limits must be defined as specific actions that can be taken and not in broad general terms. These actions must be defined in advance in order to quantify the personnel requirements, describe locations, limit costs, and specify time constraints. An example is the construction of a specific amount of fire line to prevent a prescribed burn from leaving the prescribed, designated

[Home](#)

[What's New](#)

[Preparedness](#)

[Policy](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Personnel Quals.](#)

[Ignitions](#)

[Holding Actions](#)

[Monitoring](#)

[Debris Disposal](#)

[Complexity](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)
[Criminal Cases](#)
[Glossary](#)
[References](#)

[Rehabilitation](#)

boundaries.

2.2.4 FUEL MANAGEMENT EFFECTIVENESS MONITORING

It is appropriate to use Hazard Fuel Reduction Operations and Wildland/Urban Interface (subactivity 9263 and 9264) funding to facilitate adaptive management when evaluating fuels management program and project effectiveness, and to ensure that refuge resource management goals and objectives are not compromised by the fuels management projects. The use of 9263 funds is limited to monitoring the first and second order effects of fuel management projects (prescribed fires, mechanical or chemical fuel treatments, etc.) on fuel and wildlife habitat composition and structure, as recognized and well-described as measurable objectives in the approved refuge Fire Management Plan and/or an approved refuge habitat management plan. Monitoring is limited to before and after treatment and at 1, 2, 5, 10, and 20 year after treatment intervals.

Although funding wildlife population inventories or fire effects research or management studies on wildlife is not an appropriate use of 9263 funds, evaluating fuel management treatment effects on wildlife habitat composition and structure is intended to complement these inventories, management studies and research projects.

Fuels management effectiveness monitoring requires the preparation and approval of a monitoring plan. This plan can be a separate Fuels Treatment Monitoring Plan or part of a holistic adaptive management program that integrates all refuge resource monitoring activities. Whether separate or integrated the plan should contain:

- A full description of the fuel and wildlife habitat monitoring [attributes](#), monitoring objectives, approved monitoring protocol description in sufficient detail that a successor can continue the monitoring, and the approved refuge Fire Management Plan and/or habitat management plan reference identifying the monitoring need.
- Description of management actions to be taken when monitored habitat attributes reach established threshold levels.
- The refuge's commitment to implementing and completing the monitoring and management actions.

Regional Fire Management Coordinators will assure that before any fuel treatment monitoring (beyond the first order fire effects monitoring in the Prescribed Fire Plan) is approved for funding:

- The fuel and wildlife habitat monitoring activities are adequately described in the approved refuge Fire Management Plan and/or an approved refuge Comprehensive Conservation Plan or Habitat Management Plan.
- The monitoring protocols conform with regionally established fuel and wildlife habitat monitoring protocols established under Fulfilling the Promise WH-10(1) action item or the Service's [Fuel and Fire Effects Monitoring Guide](#).
- The plan is independently reviewed by the regional fire ecologist and/or wildlife biologist to determine if the proposed protocols are the most cost effective and statistically defensible means of addressing monitoring objectives.
- All stakeholders are aware of management changes that may result from the monitoring results.

2.2.5 DEBRIS DISPOSAL

Fire has been employed to remove various types of debris generated as well as to support many routine maintenance activities. Some of these fires have been conducted without proper planning or qualified personnel and have led to wildland fires with injuries, tort claims, damage to natural and cultural resources, and loss of structures.

Fire is used to remove small amounts of wildland fuels generated in maintenance activities, in the

removal of hazardous trees, or during construction activities. Where permitted specifically by local regulations, discarded building and administrative materials are also burned. All such activities and all new debris burning projects will be reviewed for complexity by a fire management officer. Burning environmentally hazardous or degrading materials are not acceptable practices.

Contracts involving the generation or disposal of such fuels, will be developed and conducted in coordination and consultation with a fire management officer. All construction contracts/projects which produce vegetative debris will specify when and how the material will be disposed. If fire is a potential disposal method, the refuge or regional fire management officer must review and approve the contract stipulations related to debris burning. The project/contract must include funding for planning and conducting the debris burning and identify the responsible individual(s).

2.2.6 PRESCRIBED FIRE COMPLEXITY ANALYSIS

A complexity analysis will be performed on all prescribed fires regardless of size. There are two purposes for this analysis:

- As a FIREBASE input for determining programmatic funding and staffing needs. The FIREBASE Complexity Analysis ([Exhibit 2-2-2](#)) is used for this purpose. The complexity score from the FIREBASE Complexity Analysis will be included on the Fire Report (DI-1202) in the "Remarks" section for this purpose. The individual scores are used to determine a summary complexity score and the "normal" prescribed fire year which is used in the FIREBASE budget analysis.
- As an evaluation tool for individual Prescribed Fire Plans to determine areas of concern and where plan modification may be appropriate. For this purpose the [NWCG Prescribed Fire Complexity Rating System Guide](#), NFES 2474 is used.

This page was last modified 05/06/03

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Exhibit 2-2-1: THIRTEEN PRESCRIBED FIRE SITUATIONS THAT SHOUT WATCH OUT!

1. You are burning with a plan that has not been approved by the appropriate line officer.
2. You are not a qualified burning boss but have been told to go ahead and burn.
3. The objective of the burn is not clear.
4. There are areas of special concern within the burn that cannot be burned.
5. Private land or structures adjoin the burn.
6. You are uncomfortable with the prescription.
7. You have not requested spot weather forecasts.
8. You decide a test fire is unnecessary.
9. You decide all your people are old hands and no briefing is necessary.
10. Escape probability is small so you don't bother with escape planning.
11. You, or the firing boss, are beginning to lose control of your torch people.
12. Mop-up and patrol instructions are not specific or understood.
13. You haven't lost one in a long time and are starting to feel smug.



[Back](#)

Exhibit 2-2-2: FIREBASE COMPLEXITY ANALYSIS

Complexity elements are used to define the relative complexity of a prescribed fire project. For the 8 complexity elements listed, users assign a complexity score of 0, 1, 3, 5, 7 or 9, based upon the rating criteria described for each numeric score. Even numbers or numbers greater than 9 are not permitted. If a specific prescribed burn does not precisely match the stated criteria in every respect, a station will have to use its best judgment determine which rating is most appropriate. Each prescribed burn does not have to meet all listed rating criteria for a particular numeric score to qualify for that rating. Each higher rating category includes all the rating criteria listed for the previous categories.

1. POTENTIAL FOR ESCAPE:

Score Criteria

[0] No potential for prescribed fire escape. Burn unit surrounded by non-burnable fuel or water.

[1] Little potential of spot fires outside burn unit. If occurring, only one to two totaling no more than 0.25 acre. Spots can be controlled utilizing on-site holding forces.

[3] Potential for multiple spot fires (more than two) outside the burn unit totaling less than 1 acre, but still controllable utilizing on-site holding resources. One or two dangerous fuel concentrations exist near the burn unit perimeter, and are expected to result in limited torching and spotting potential.

[5] Potential for multiple spot fires outside the burn unit totaling more than 1 acre, requiring greater than average holding capability along certain sections of burn perimeter. Additional holding resources may be needed to control if escape occurs. Fuel outside burn unit is continuous, with limited fuel breaks. Engines and heavy equipment are primary suppression tools.

[7] An escaped fire will exceed the capability of the holding resources on site. Additional resources will need to be requested for suppression. Escaped fire will cause implementation of contingency plan, and prescribed burn will be declared an unwanted and unplanned wildland fire. Fuel outside burn unit may be continuous and heavy with no fuel breaks making suppression efforts difficult. Engines and heavy equipment are primary suppression tools. Probability of Ignition greater than 70 percent.

[9] Good potential for multiple fire escapes. An escaped fire will exceed the capability of the holding resources on site and additional resources will need to be requested. Escaped fires will cause implementation of contingency plan and prescribed burn will be declared an unwanted and unplanned wildland fire. Fuel outside the burn unit is extensive and heavy, making suppression actions difficult. Prescription calls for fireline intensity and fuel moisture in the primary fuel model that are known to cause serious spotting potential. Probability of Ignition greater than 85 percent. Wind speeds at the upper end of prescription.

2. VALUES TO BE PROTECTED

Score Criteria

[0] No risk to people, property, cultural and natural resources, either inside the designated burn unit or in the event of fire escape.

[1] Burn is in an area infrequently visited by people and contains no historic structures, buildings,

sensitive biological communities, T&E species, or habitats that could be damaged by prescribed fire. The area adjacent to the burn may contain a few locally significant natural or cultural resources, or structures that could be damaged by fire escapes.

[3] Burn is in an area occasionally visited by people, and may be adjacent to a primary field unit road. The burn unit contains structures, cultural resources, sensitive biological communities, or T&E habitat that must be protected from fire.

[5] Burn is in an area that receives moderate use. Public safety is a major concern addressed in the burn unit plan, but still requires a minor commitment of project resources. The unit may contain several significant structures; there may be one or two primary natural or cultural resources (as identified in the station fire management plan) inside or immediately adjacent to the burn unit which must be protected from fire. - OR - the area adjacent to the burn unit contains one or two cultural or natural resources, or structures valued between \$50,000 and \$250,000 that could be threatened by fire escapes.

[7] Burn is in an area that receives moderate use, and protecting public safety requires a modest commitment of project resources. The burn unit may contain several significant structures, and contain or be immediately adjacent to several sensitive biological communities or habitats (as identified in station fire management plan) that must be protected from fire. - OR - the area adjacent to the burn unit contains three or more cultural or natural resources or developed sites with structures valued between \$250,000 and \$500,000 that could be threatened by fire escapes.

[9] The burn unit is in an area of concentrated public use, and protecting public safety requires a major commitment of project resources. The unit may contain several major structures (such as residences, historic buildings) and there may be critical natural or cultural resources (such as threatened or endangered species, or major archeological artifacts) inside the burn unit that must be protected from fire. - OR - the area adjacent to the burn unit contains critical natural or cultural resources or developed sites with structures valued at more than \$500,000.

3. FUELS/FIRE BEHAVIOR

Score Criteria

[1] Fuels are uniform, and fire behavior is easily predicted using the standard fire behavior models and prediction systems (BEHAVE PROGRAM). Terrain is mostly flat, or the slope is uniform.

[3] Fuels within the primary model vary somewhat in loadings and arrangement, but are still well represented by one of the standard fire behavior fuel models. There may be small areas of secondary fuel types present, mostly away from the burn unit perimeter. The terrain contains low relief, and slope and aspect cause minor variations in fire behavior. The fire behavior variations present no difficulties in carrying out the burn, and the predominant fire behavior still can be predicted easily under most prescription conditions.

[5] Considerable variation exists within the primary fuel complex. Prescriptions may be based on two fuel models, or may require a customized model in addition to or in place of a standard model. A few areas of unusual fuel concentrations or atypical fuels not well represented by the prescription-based models may exist on or near the burn unit perimeter. The terrain contains significant relief, but the variations present only minor control problems, and no problems in meeting burn unit objectives. Fire behavior can still be predicted using standard fire behavior prediction systems.

[7] Major variations in the fuel complex require two or more fuel models, and may require several customized models. High fuel concentrations and atypical fuels not well represented by the prescription-based models may be common on or near the burn unit perimeter. The terrain

encompasses two or three major vegetative communities through a broad elevational gradient. Variations in slope and aspect have major effects on fuels, fire weather and fuel moisture. The resulting variations in fire behavior may present moderate fire control problems and minor problems in meeting the overall burn unit objectives. Fire behavior cannot be predicted well using standard fire behavior prediction systems without application of adjustment factors.

[9] The burn unit contains highly variable fuels throughout, making it difficult to utilize standard or customized fuel models. The terrain encompasses more than three major vegetative communities through an elevation gradient so broad that more than one climate zone may be present. Wide variations in slope, aspect and elevation have major effects on fuels, fire weather and fuel moisture. The resulting variations in fire behavior may present major fire control problems and moderate problems in meeting overall burn unit objectives. Fire behavior cannot be predicted well without the aid of local experts (Fire Behavior Analysis).

4. FIRE DURATION

Score Criteria

[1] Entire burn unit will be burned in one burning period. Some minor residual burning may continue inside the unit, but requires no continued resource commitment. Primarily 1-hour fuels.

[3] Complete burnout of burn unit requires 1 to 3 days. Some minor residual burning may continue inside the unit, but requires no continued resource commitment. Primarily 10-hour fuels.

[5] Complete burnout of burn unit requires 2 to 3 days. Significant residual burning inside the burn perimeter may continue for up to 3 days, requiring small holding crew. Primarily 100-hour fuels.

[7] Complete burnout of burn unit requires 3 days to 1 week. Significant residual burning inside the burn perimeter may continue up to another week, requiring a holding crew on site during the burning period. Primarily 1,000-hour fuels.

[9] Complete burnout of burn unit requires more than 1 week. Significant residual burning may continue for up to another 3 weeks along most of the burn unit perimeter, requiring a complete holding crew on site.

5. AIR QUALITY

Score Criteria

[1] Burn is remote from developments or visitor use areas or is of such small size that smoke impacts are insignificant. No critical targets are present. Critical targets are areas that are unusually sensitive to smoke impacts. These include areas such as airports, highways, air quality non-attainment areas, and hospitals in which health and safety are quickly and severely impacted by even minimal amounts of smoke, targets that already have an air pollution or visibility problem, and any targets where the impact of smoke will be compounded by the presence of emissions from other sources. Burning is outside the non-attainment areas, and RACM/BACM eliminates any impacts to these areas.

[3] If prescription parameters are not met one or more minor developments or visitor use areas may experience noticeably impaired visibility and increased particulate concentrations, but not in excess of secondary Federal standards. The impairment is expected to last no more than 3 days. No critical targets are present. There are no impacts to non-attainment areas.

[5] If prescription parameters are not met several communities or visitor use areas may experience significantly impaired visibility (as defined in State, county, or field station visibility standard) or particulate concentrations exceeding secondary Federal standards. The impairment is expected to last no more than 1 week. Not more than one health-related complaint is likely to be received from health or medical authorities. No critical targets are present. Smoke trajectory is important, but broad.

[7] If prescription parameters are not met one town (more than 20,000 people) or one major visitor use area may experience significantly impaired visibility (as defined in a State, county or field station visibility standard) or particulate concentrations exceeding secondary Federal standards. The impairment is expected to last not more than 1 week. One to three critical targets are present. Smoke trajectory is critical. Mixing height and transport wind speed may be important.

[9] If prescription parameters are not met several towns (each of 20,000 people or more) or several major visitor areas may experience significantly impaired visibility (as defined in State, county or field station visibility standard) or particulate concentrations exceeding secondary Federal standards. The impairment is expected to last more than 1 week. Any impact likely to result in a violation of a primary Federal air quality standard would also qualify. Smoke trajectory, mixing height, and transport wind speed are critical.

6. IGNITION METHODS

Score Criteria

[1] Burn is ignited using drip torches, fusees, or other simple ground methods. Ignition requires not more than two personnel. Ignition patterns are simple, with no chance for confusion or hazardous situations to develop.

[3] Burn is ignited using simple ground methods or Terra Torch device (or equivalent). Ignition requires three to four personnel who may work in small teams igniting separate areas simultaneously. Ignition patterns may be complex enough to require detailed planning, but there is only minor chance of confusion. Ignition team is not expected to become involved in hazardous situations.

[5] Burn is ignited using a combination of ground methods, or both ground and aerial methods. Ignition requires four to six personnel working in teams to ignite separate areas simultaneously. Burn and ignition complexity requires separate position for ignition specialist. Ignition patterns require detailed planning, coordination between teams, and considerable attention to avoid confusion. Ignition teams may be exposed to hazardous situations for short periods.

[7] Ignition methods are tailored to accomplish different results in different sections of the burn. Burn unit may be composed of several fuel types requiring different ignition techniques and patterns. Ignition team(s) is composed of six to eight personnel, who may ignite separate areas simultaneously. Several ignition specialists may be required for different segments of the burn. Ignition methods require detailed planning and coordination often including an ignition specialist in aerial command post. Ignition teams are frequently exposed to hazardous situations due to fuels, fire line intensity, and complex terrain. Ignition methods or patterns are subject to revision by burn boss to achieve desired results or due to changing conditions.

[9] Burn requires a combination of complex aerial and ground techniques, often including helitorch, in complex, hazardous terrain and fuels. Ignition team is composed of more than eight personnel. Ignition methods require detailed planning by experts with extensive experience in specialized techniques. Ignition methods are subject to frequent revision by burn and ignition bosses due to changing or uncertain conditions. Detailed coordination is imperative to avoid placing team members

in unacceptably dangerous situations.

7. MANAGEMENT TEAM SIZE

Score Criteria

[1] Burn team consists of four personnel, with the burn boss holding several overhead positions.

[3] Burn team consists of four to six personnel, including separate positions for Burn Boss and Holding Specialist.

[5] Burn team consists of seven to nine personnel, including separate positions for Burn Boss, Ignition Specialist, and Holding Specialist.

[7] Burn team consists of 10-12 personnel, including Burn Boss, Ignition and Holding Specialist, Aircraft Manager (aerial ignitions), and a Fire Weather Observer.

[9] Burn team consists of more than 12 personnel, including Burn Boss Type I, Holding Boss, Ignition Specialist, Aircraft Manager, Weather Observer, and several ignition and holding foremen.

8. TREATMENT OBJECTIVES

Score Criteria

[1] Objectives are limited to fuel reduction or maintenance burning and are easily achieved (e.g., removing cured grasses from grasslands or field maintenance). Prescriptions are broad and encompass safe burning conditions.

[3] Objectives are limited to dead and downed fuel reduction, or simple habitat restoration projects involving minor changes to vegetation. May involve two or three different fuel models. Objectives are easy to achieve using relatively low-intensity surface fires and simple burning patterns. Range of acceptable results for the burn objectives are broad.

[5] Objectives include dead and downed fuel, and live fuel reduction burns or change to structure of vegetative/habitat communities. Also include habitat conversion projects requiring changes in the composition of two or more vegetation types. Objectives and results are broad and could be moderately difficult to achieve, and may often require moderate intensity fires involving living fuels. Burning patterns are moderately complex. Flame lengths or scorch heights are critical to meet burn objectives.

[7] Objectives include living and dead fuels. Include habitat restoration projects requiring changes in the structure and composition of two or more vegetative habitats. Narrow burn parameters (prescription) fire behavior, smoke dispersal, operational constraints, and other burn criteria present a limited opportunity of project success with a single burn. The chance of success is heavily dependent on careful planning and precise timing.

[9] The prescription and objectives may necessitate burning at high fire intensities and require a precise ignition sequence to keep fire behavior within prescription parameters.



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Legal Authorities\]](#) [\[Interagency Coord.\]](#) [\[Responsibilities\]](#) [\[Guidelines\]](#)



2.3 AIR QUALITY AND SMOKE MANAGEMENT

2.3.1 INTRODUCTION

Clean air is a primary natural resource value in all Fish and Wildlife Service units. The protection of these resources must be given full consideration in fire management planning and operations.

In order to protect the air resource from the harmful effects of smoke, refuges must not only comply with the regulations and standards stated herein, but take aggressive action to manage smoke from wildland fires to minimize impacts and maintain air quality. To do this, the effects of smoke on air resources must be identified, the current levels of pollutants established, the levels of pollution for different fire management actions estimated, the effects on visitor health and enjoyment identified, and the best measures to control/mitigate the smoke emissions and effects energetically pursued.

Internal refuge programs for planning and monitoring resource and fire management actions, conducting prescribed and wildland fire activities, and interpreting fire programs must be augmented by vigorous participation in external (interagency) planning and regulatory actions as appropriate.

This section provides:

- The legal requirements for air quality which must be met by a smoke management program.
- Directions for establishing acceptable within-refuge standards.
- A statement of the need to monitor essential variables.
- Recommendations for working with regulatory boards/agencies.
- Guidance on how and with whom to coordinate smoke management questions and practices.

2.3.2 LEGAL AUTHORITIES AND RESPONSIBILITIES

General Authorities for Air Resource Management. There are several acts of Congress which relate to the Fish and Wildlife Service's general authority to manage the air resources of refuge units. These include the National Wildlife Refuge Improvement Act of 1997, Clean Air Act, National Wildlife Refuge Administrative Act of 1966, the National Environmental Policy Act of 1969, the Wilderness Act of 1964, and other statutes. These laws, together with refuges' enabling legislation and legislative histories, collectively provide the Fish and Wildlife Service with opportunities to manage the air resource and protect other refuge resources and values that are dependent upon air quality.

Clean Air Act (42 United States Code (USC) 7401 et seq). The most explicit legislation pertaining to the Fish and Wildlife Service is the Clean Air Act, as amended in 1977 and 1990, which defines the authority and duty of the Fish and Wildlife Service to protect refuge resources from air pollution-related effects and damage. The Clean Air Act establishes specific air quality management programs that provide special protection for many refuges and wilderness areas.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Introduction](#)

[Legal Authorities](#)

[Interagency Coord.](#)

[Responsibilities](#)

[Guidelines](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

Sections 160-169 of the Act establish a program to prevent significant deterioration (PSD) of air quality in "clean air areas" of the country (i.e., attainment areas), which include many refuge units. Among the purposes of the PSD program are "to preserve, protect and enhance the air quality in national wildlife refuges, parks, monuments, seashores, and other areas of special national or regional natural, recreational, scenic or historic value." Another objective of the PSD is to protect resources that might be sensitive to pollutant concentrations lower than the National Ambient Air Quality Standards (NAAQS), which are established for the protection of public health and welfare but do not necessarily provide for protection of refuge natural resources. The PSD program also establishes an area classification scheme which determines the level of air quality protection afforded these "clean air areas". All PSD areas were initially classified as Class I or Class II areas. Class I areas, which include some national wildlife refuges, receive the highest degree of protection.

Congress provided additional protection for Class I areas in Section 169A of the Clean Air Act, which specifies a national goal of "remedying any existing and preventing any future manmade visibility impairment" in these areas. Class I areas are defined in the Clean Air Act as a national park over 6,000 acres or a national wilderness area and national memorial park over 5,000 acres that were in existence as of August 7, 1977. Service wilderness Class I areas are: Bering Sea, Simenof, Tuxedni, Chassahowitzka, St. Marks, Okefenokee, Wolf Island, Breton, Moosehorn, Seney, Mingo, Medicine Lake, Red Rock Lakes, UL Bend, Brigantine, Bosque del Apache, Salt Creek, Swanquarter, Lostwood, Wichita Mountains, and Cape Romain.

The Clean Air Act instructs the EPA to establish policy and guidance for states to develop specific State Implementation Plans (SIP) and Smoke Management Programs (SMP). The latest guidelines are in the [Interim Air Quality Policy on Wildland and Prescribed Fire](#). The states use these guidelines to develop SIPs/SMPs which Service fire management activities must address.

Fish and Wildlife Service Compliance Responsibilities. Fish and Wildlife Service fire management activities which result in the discharge of air pollutants (e.g., particulates, carbon monoxide, and other pollutants from fires) are subject to, and must comply with, all applicable Federal, state, interstate, and local air pollution control requirements, as specified by Section 118 of the Clean Air Act, as amended (42 USC 7418). These requirements are the same substantive, procedural, and administrative requirements (See [561 FW 2](#)) that apply to a private person or other non-governmental entity. The 1990 amendments provide for air quality permits and emissions fees. If adopted by a state in their implementation plans these fees may affect some refuges significantly.

Fire plays a principle, and in some cases a dominant role in maintaining the integrity of refuge resources. Since fires are not point sources, but rather tend to be spatially distributed singular events, temporary impacts to visibility and visitor enjoyment must be recognized, expected, and managed. This may include temporary closures or warnings as acceptable during the progress of beneficial, ecologically essential fires. Interpretive programs should include clear and reasonable explanations for such necessary practices.

All refuges, including those with exclusive jurisdiction, are required to obtain necessary permits for prescribed fires, comply with the NAAQS both inside and outside refuge unit boundaries, and protect visibility in Congressionally-mandated Class I areas.

There are certain absolute or minimum requirements that apply to Fish and Wildlife Service fire management activities, such as compliance with the NAAQS and the visibility protection regulations for Class I areas. These are Federally mandated programs that are enforced nationwide. Implementation of these programs is primarily carried out by state and local air quality agencies.

There may be additional state and/or local air quality rules and regulations that must also be complied with if the jurisdictional boundaries of these agencies include lands managed by the Fish and Wildlife Service or lands that may be affected by activities occurring on Fish and Wildlife Service lands.

Such additional requirements may include:

- State or local ambient air quality standards that are more stringent than the NAAQS.
- Ambient standards that are for pollutants other than those for which NAAQS have been developed, such as particulate matter smaller than 2.5 microns in size (PM-2.5). This is a size range of particulate that could significantly affect the management of smoke from wildland fires.
- Protection of state-identified scenic views that may or may not be associated with Fish and Wildlife Service areas.
- Possible quantitative standards for protection of visibility in Class I areas, such as specified minimum acceptable levels of visual range or contrast that will be allowed.

Compliance with these various requirements may necessitate the use of computer simulation models or even instrumented monitoring in the field, as specified by the regulatory authority.

An additional concern is whether smoke emissions from fires are considered to be "natural" or "human caused" emissions. Air pollution caused by prescribed fires may reasonably be interpreted by state and local air quality agencies to come within the scope of Section 118 of the Clean Air Act. A thorough knowledge of interstate, state, and local air quality regulations and policies toward the regulation of prescribed fires is essential. Failure to comply with any applicable requirements, such as open burning permit requirements, could subject the Fish and Wildlife Service to fines or other sanctions.

Accidental or willful noncompliance with air quality standards or visibility protection requirements may result in the development of control programs by external agencies that could directly affect and hamper the Fish and Wildlife Service's management of its fire program. Previous intense smoke episodes caused by fires have raised concerns about exposure to unhealthful levels of smoke (measured as PM-10) and the need to develop emergency episode plans to effectively deal with such problems.

Many western state air quality agencies are considering appropriate steps to take in case future episodes are encountered. Anticipated state actions could include requiring land managing agencies to deploy and operate monitoring equipment, issuing notices to the general public about the potential health hazards of such exposure, and issuing evacuation orders when certain air pollution levels are present.

The 1990 Clean Air Act provides new emphasis for reducing emissions in areas that do not meet the NAAQS and are designated a non-attainment areas (NAA). Refuges located in NAA's may be subject to reasonable or best available control measures including:

- Smoke impact monitoring
- Mandatory state permits
- Audits by state air quality staffs
- Emissions reporting and inventory
- Emission fees
- Burner certification
- Emission reduction tracking
- More state oversight

2.3.3 INTER AND INTRA-AGENCY COORDINATION

A good working relationship between the Fish and Wildlife Service, other Federal and state land management agencies, and interstate, state, and local air quality officials should help assure that both air quality control and fire management objectives are met with the least amount of conflict. The Interim Air Quality Policy on Wildland and Prescribed Fire correctly identified that cooperation and partnerships are needed in order to balance America's natural heritage and the public interest. Air quality interests (i.e., regulators, public, and neighbors) must be involved in Comprehensive Conservation, Habitat Management, and Fire Management Plan development. Wildlife resource interests (i.e., Service wildland and fire management program managers, partners, and public) must be involved in SIP and SMP development.

State Agency Coordination. Coordination with a state or states air regulatory office is required during the development of resource and fire management plans in order to determine procedures for compliance with state air quality regulations. Refuge staff can consult with the regional air quality coordinator or the FWS Air Quality Branch (AQB) on the proper procedures for obtaining coordination with the state or states in which the refuge is located.

The regional air quality coordinator may handle the coordination activities with the state or may recommend that the refuge staff work directly with the representative of the state. If more than one refuge with fire management concerns is located in a state, it may be advantageous for each refuge to coordinate with local representatives of the state agency while the regional air quality or fire management coordinator maintains coordination with the central state office. In states where more than one state agency is involved, e.g. one for smoke management and one for air quality, it is important that there be adequate coordination with each.

Following initial consultation with the state agency, procedures for compliance with state air quality regulations should be drafted for the Fire Management Plan. A copy of the draft procedures should be supplied to the state agency for review prior to completion of the Fire Management Plan.

The refuge should continue to coordinate with the state throughout implementation of the Fire Management Plan to promote compliance with state regulations. It may be helpful to invite selected state air quality officials to visit the refuge when a prescribed fire is in progress.

In some states a memorandum of understanding with the state may be appropriate. Such memoranda should clearly specify any procedural and substantive requirements that must be met by the Fish and Wildlife Service in conducting its fire management programs. Assistance in writing such agreements should be sought from the regional office and the regional solicitor, and should include consultation with the Fish and Wildlife Service Air Quality and Fire Management Branches.

When a refuge is notified by the state that an air pollution violation has occurred, the refuge will work with the notifying agency and provide them with a compliance plan and schedule as appropriate. The regional air quality coordinator should be notified, and the Air Quality Branch should be contacted if technical assistance is required.

Air Quality Branch (AQB) Coordination. At the time the draft Fire Management Plan is sent to the regional office for review, the regional office will determine if the smoke management portions of the plan will be sent to the AQB for review and comment. A copy of the comments from the AQB will be returned to the region and will be forwarded to the refuge with the regional comments. When the draft Fire Management Plan is in the region for review, the Regional Fire Management Coordinator will ensure that the air quality coordinator reviews the smoke management portion of the plan and the comments from AQB before they are returned to the refuge. A copy of the air quality section(s) of the approved Fire Management Plan will be sent to the AQB.

Requests for technical assistance from the AQB should be made directly to that office through appropriate channels. The regional air quality coordinator and the RFMC will be notified when such a request is made.

Interagency and Regional Coordination. The Regional air quality coordinator, Regional fire management coordinator, zone FMO, or Rx fire specialist will usually be the agency representative for the development of interagency or regional smoke management plans. When a decision is made to develop an interagency or regional plan, the agency representative will inform AQB, and an agreement will be reached on the degree of their subsequent involvement. An agreement will also be reached between the refuge and region on the extent of involvement for each.

Public Coordination. Educating the public on the values of both clear air and the natural process of fire is important to increasing public understanding and support of the refuge fire management programs. Interpretation in the refuge is the primary method for providing this education. The public should be aware that the Fish and Wildlife Service is striving to protect air resources in the refuge

while still using fire to both simulate natural ecological processes and as a tool to accomplish resource objectives. Shortly before prescribed burns are anticipated, information will be made available to state contacts, refuge visitors, local citizenry, and the press about what is happening in the refuge. On-site information can also be used to alleviate visitor concern about the apparent destruction of refuge resources by fire or impairment of views due to temporary smoke.

2.3.4 REFUGE RESPONSIBILITIES

In addition to the influence of smoke on health and safety, the influence on the visual resource must also be considered. Visibility will be a consideration in refuges with Class I areas. In addition, FWS Class II areas located near Class I areas need to consider how emissions from smoke will impact visibility in the Class I area.

Although it is recognized that fire, and therefore smoke, is a natural process, the presence of chronic or severe episodes of smoke may impinge unacceptably upon refuge objectives.

Each refuge is required to develop methods to manage smoke from prescribed fire and, to the extent possible, from wildland fire. Air quality management objectives must be set, and prescriptions and techniques must be developed to meet these objectives. These objectives should appear in all Prescribed Fire Plans and fire situation analyses.

In some areas, local air quality offices may have already established visibility standards. These standards should be discussed with the local air quality office and the regional air quality coordinator. The refuge should identify the key smoke sensitive areas (highways, campgrounds, developments, etc.) for which smoke management objectives will be created.

Air quality management objectives must be quantifiable and measurable at designated points in the refuge. Objectives could include maintenance of acceptable visual range, allowable loss of detail or clarity of a key feature, the number of consecutive days in which the visual range is attenuated below the acceptable standard, consecutive nights with the odor of smoke in a developed area, or **maintenance of acceptable visibility on highways**.

The techniques and prescribed conditions which will be used to achieve smoke management objectives are defined in a similar fashion to the way techniques and burning prescriptions are defined for the achievement of fire management objectives. Critical mixing heights, transport wind speeds, and wind directions should be stated. Smoke management techniques should include an appropriate combination of the dilution of particulate matter, avoidance of targets, and emission reduction. Smoke management courses are available that provide instruction in these techniques.

The documents will also describe the personnel and the methods which will be used to monitor and measure the degree to which the objectives have been met, or when they are violated. The presence or absence of the prescribed conditions for smoke management will also be recorded.

Prescribed Fire Plans, Wildland Fire Implementation Plans, or Wildland Fire Situation Analysis will describe the holding actions which may be used to keep the fire within prescription for air quality objectives, particularly when smoke dispersion is deteriorating to the point that it is possible that smoke and air quality objectives will no longer be achieved. Example may include:

- Using firing crews to ignite fuels so that the fuels burn with flaming rather than with smoldering combustion.
- Using natural barriers or constructing firelines to halt fire spread.
- Mopping up smoldering heavy fuels until conditions improve for smoke dispersion, at which time the fire may be reignited.
- Or, using hose lays and pumps to wet fuels to extinguish all or a portion of the fire front, with possible subsequent re-ignition under prescribed dispersal conditions.

All such actions must be approved by the Refuge Manager as part of the Prescribed Fire Plan, and

may be funded only with the funding source supporting that activity.

The Prescribed Fire Plan will also describe the amount or periods of time that air quality objectives may be violated before the fire is declared an unwanted wildland fire and appropriate suppression actions are taken. This time period should be discussed with the local air quality regulatory office and regional air quality coordinator if actual regulatory values such as NAAQS are involved.

If a prescribed fire is not meeting objectives or is exceeding prescription parameters, a Wildland Fire Situation Analysis will be completed and the appropriate management response implemented. The fire will remain an unwanted wildland fire even if dispersal conditions improve again to prescribed standards. The suppression strategies chosen and tactics employed should consider smoke objectives (preferred WFSA alternative).

Some fires can be reasonably expected to significantly affect air quality in and around the refuge. A Wildland Fire Situation Analysis should be sent to the appropriate state air quality regulatory agency for its information and comment. Large fires may affect the number of burning permits which can be issued, and therefore affect the amount of prescribed burning which can be done by neighboring land management agencies.

2.3.5 SMOKE MANAGEMENT GUIDELINES

General Guides - "How to do it" publications which cover all kinds of burning in all areas where Fish and Wildlife Service is involved are not available. Four publications to which one may refer for more detail are:

- Southern Forestry Smoke Management Guidebook. Mobley et.al., USDA Forest Service GTR SE-10, December, 1976. A very detailed and comprehensive book but written specifically for the Southern States. It is an excellent reference for principles of smoke management. The abbreviated principles listed below are from this publication.
- Principles of Smoke Dispersion from Prescribed Fires in Northern Rocky Mountain Forests. W.R. Beaufait and O.P. Cramer, USDA Forest Service, Division of Fire Control, Northern Region, Missoula, Montana, August 5, 1969 (revised January 15, 1972). This publication covers the subject well but is confined to the Northern Rocky Mountains.
- Slash Smoke Management Guidelines. Office of the State Forester, Salem, Oregon, September 11, 1969. An excellent publication, though limited to slash burning and to the State of Oregon
- Prescribed Fire Smoke Management Guide. National Wildfire Coordinating Group Publication No. 420-1, February, 1985. A good source of general information pertinent to all geographic regions and fuel types.
- Smoke Signals - a U. S. Fish and Wildlife Service information resource for responsible wildland and prescribed fire smoke management.

Principles - Listed below are some abbreviated principles to guide smoke management planning.

- Have defensible objectives. Be sure to have clear resource objectives and consider the impact on the total environment, both on and off-site.
- Obtain and use weather forecasts. Weather information and fire weather forecasts are available to all resource managers. Such information is needed to determine what will happen to the smoke, as well as to determine the behavior of the fire.
- Don't burn during pollution alerts or temperature inversions. Smoke tends to stay near the ground and not disperse readily. Many fire weather forecasters include this information in their forecasts
- Comply with air pollution control regulations. Know the regulations when making the prescription. Check with the appropriate state agency.
- Burn when conditions are good for rapid dispersion. The atmosphere should be slightly unstable so smoke will rise and dissipate - but not so unstable as to cause control problems. Again, the fire weather forecaster can help.

- Determine the direction and volume of smoke. Especially near highways and populated areas. The screening system described below will help in making this determination.
- Use caution when near or upwind of smoke sensitive areas. Burning should be done when wind will carry smoke away from heavily traveled roads, airports, and populated areas.
- Notify local fire control office, nearby residents, and adjacent landowners. This is only common courtesy, as well as a requirement in many areas. It will let them know it is not a wildland fire and will provide advance notice of any adverse public reaction - such as people with respiratory ailments, wash day, etc. Keep the public informed
- Use test fires to confirm smoke behavior. Set in the area proposed for burning, away from roads and other 'edge' effects.
- Use backing fires where possible. Assuming resource management objectives can be met, backing fires give more complete consumption of fuel and produce less smoke. Even though slower and more expensive, less pollutants are put into the air and visibility is less affected. If other firing methods are used, be sure that the fire is hot enough and the weather conditions suitable for venting smoke into the upper atmosphere.
- Burn in small blocks. The larger the area being burned, the more visibility is reduced downwind and a higher concentration of particulates is put into the air. However, it may be better to burn all the area when weather conditions are ideal for smoke dispersion.
- Mop up along roads. Burn out and start mop up along roads as soon as possible to reduce impact on visibility.
- Be cautious of nighttime burning. Predicting smoke drift and visibility is more difficult at night. The wind may lessen or die out completely and smoke will tend to stay near the ground. Burn at night only when a forecast of optimum conditions has been made.
- Have emergency plan. Be prepared to control traffic on nearby roads if the wind direction changes. Be prepared to stop a prescribed fire if it is not burning according to plan or if weather conditions change.
- Burn when duff and soil moistures are high to prevent smoldering ground fires.
- Avoid involving snag trees or stumps by treating with foam or chainsaw felling. Be prepared to mop up if necessary.
- When piling debris, use round piles rather than windrows. Avoid mixing with dirt (use root rake for piling) and allow fuels time to dry prior to piling.
- Burn under conditions of low relative humidity and fuel moistures because smoke particles combine with moisture to produce poor visibility.
- Avoid days with low morning transport wind speed (less than 4 mph) or low morning mixing heights (less than 1500 feet).
- Anticipate down-drainage smoke flow, particularly at night.

Screening System for Managing Smoke. By following a written prescription and all of the directions under Principles above, a land manager will reduce the production of smoke and insure good dispersion. However, smoke will still be produced, and the manager needs to determine the impact it might have on the safety and welfare of people or the environment. The Southern Forestry Smoke Management Guidebook includes a system for predicting smoke concentrations at any distance downwind. The whole system is not discussed here, but consists of five steps.

Step 1 - Plotting the trajectory of the smoke plume.

Step 2 - Identify smoke sensitive areas.

Step 3 - Identify critical targets.

Step 4 - Determine fuel type. If your fuel type is not comparable with those in the Guidebook, you can not use the system.

Step 5 - Minimize risk.

Information Exchange. Keep in contact with other land management agencies that use prescribed fire. Take advantage of any information that can be obtained.

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U.S. Fish & Wildlife Service

Fire Management Handbook



CHAPTER 3. WILDLAND FIRE MANAGEMENT

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

3.1 [PREPAREDNESS](#) - Revised 3/17/00

3.1.1 [INTRODUCTION](#)

3.1.2 [RESPONSIBILITIES](#)

Fire Management Branch/Regional Responsibilities

Refuge Responsibilities

3.1.3 [PREPAREDNESS PLANNING](#)

Fire-related Data Processing Systems

Fire Season Delineation

Step-up Planning

Pre-season Risk Analysis

Pre-attack Planning

Guidelines for Refuge Closure/Evaluation

Dispatch Plan

3.1.4 [PREPAREDNESS ACTIVITIES](#)

Supplies, Materials and Equipment

NUS Determination Criteria

Fire Season Preparedness Evaluation

Sample Pre-attack Checklist

Accessing WIMS

Emergency Preparedness

Pre-positioning Resources

3.2 [WILDLAND FIRE MANAGEMENT](#) - Revised 3/17/00

3.2.1 [INTRODUCTION](#)

Policy

Objective

Responsibilities

NIIMS and ICS Reference Material

Wildland Fire Implementation Plan

Appropriate Management Response

3.2.2 [ORGANIZATION AND TASKS](#)

Organization

Organizational Analysis

3.2.3 [PROGRAM OVERSIGHT](#)

3.2.4 [INTERAGENCY AGREEMENTS AND COMMITMENT](#)

3.2.5 [INITIAL AND EXTENDED ACTION](#)

Initial Action

Closest Forces

Extended Action

Wildland Fire Complexity Analysis

3.2.6 [INCIDENT MANAGEMENT CONSIDERATIONS](#)

Minimum Impact Suppression

Air Operations

Personnel Work/Rest Guidelines

Extraordinary Fire Situations

3.2.7 [INCIDENT MANAGEMENT TEAM TRANSITION](#)

Delegation of Authority

Rehabilitation

Sample Delegation of Authority
Sample Amendment to Delegation of Authority
Transition to Incident Management Team Guidelines
Agency Administrator Briefing
Local Incident Commander Briefing
Release of Incident Management Team
Incident Management Team Close-out Review
Incident Management Team Evaluation
Daily Cost Accounting
Incident Status Reporting
Final Wildland Fire Record

3.2.8 RECORDS

Daily Cost Accounting
Incident Status Reporting
Final Wildland Fire Record

3.2.8 FIRE REHABILITATION

Fire Suppression Activity Damage
Emergency Fire Rehabilitation
Emergency Fire Rehabilitation Planning
Fire Damage Restoration
Fuels Management Project Rehabilitation

3.2.9 MONITORING

Exhibit 3-2-1: SAMPLE DELEGATION OF AUTHORITY

3.3 **WILDLAND FIRE USE MANAGEMENT** Revised 3/17/00

3.3.1 WILDLAND FIRE USE PLANNING AND ASSESSMENT

Wildland Fire Implementation Plan (WFIP)

3.3.2 WILDLAND FIRE USE IMPLEMENTATION PROCEDURES

WFIP - Stage 1: Initial Fire Assessment
WFIP - Stage 2: Short-Term Implementation Actions
WFIP - Stage 3: Long-Term Assessment and Implementation Actions
Maximum Manageable Area (MMA) Determination
Long-Term Risk Assessment
Wildland Fire Implementation Plan Development
Periodic Fire Assessment

Exhibit 3-3-1: WILDLAND FIRE ASSESSMENT, IMPLEMENTATION, AND DOCUMENTATION PROCESS

Exhibit 3-3-2: FIRE SITUATION

Exhibit 3-3-3: DECISION CRITERIA CHECKLIST

Exhibit 3-3-4: SHORT-TERM IMPLEMENTATION ACTION

Exhibit 3-3-5: WILDLAND FIRE COMPLEXITY RATING WORKSHEET

Exhibit 3-3-7: STAGE III: LONG -TERM IMPLEMENTATION ACTIONS

Exhibit 3-3-8: USEFUL DECISION SUPPORT TOOLS

Exhibit 3-3-9: PERIODIC FIRE ASSESSMENT INSTRUCTIONS

3.4 **WILDLAND FIRE SITUATION ANALYSIS (WFSA)** Revised 3/17/00

3.4.1 INTRODUCTION

3.4.2 WFSA GENERAL INSTRUCTIONS

3.4.3 A GUIDE FOR ASSESSING FIRE COMPLEXITY

3.4.4 PRE-ATTACK WILDLAND FIRE SITUATION ANALYSIS

Exhibit 3-4-1: WILDLAND FIRE COMPLEXITY ANALYSIS GUIDE

Exhibit 3-4-2: SAMPLE PRE-ATTACK WFSA

3.5 **WILDLAND FIRE BUSINESS MANAGEMENT** - Revised 3/17/00

3.5.1 INTRODUCTION

3.5.2 INTERAGENCY INCIDENT BUSINESS PRACTICES HANDBOOK

3.5.3 ADMINISTRATIVE PAYMENT TEAMS

Purpose/Objectives

- Authority
- Responsibility
- Determining Need
- Organization
- Dispatch Procedures
- Close Out

3.5.4 [RESOURCE ORDER FORM](#)

3.6 [WILDLAND FIRE REVIEWS](#) - Revised 3/17/00

3.6.1 [INTRODUCTION](#)

- Objectives
- Responsibilities
- Types of Reviews

3.6.2 [FIRE REVIEWS](#)

- "Hotline" Review
- Incident Management Team (IMT) Closeout and Review
- Sample Close-Out Review with IC Management Team
- Prescribed Fire/Wildland Fire Review
- Refuge Level Review
- Regional Level Review
- National Level Review
- Fire Review Procedure
- Outline for Final Reports of Fire
- Sample Questions for Fire Reviews
- Entrapment and Fire Shelter Deployment Review
- Specific Directions for Conducting an Entrapment or Shelter Deployment
- Format for Entrapment/Fire Shelter Deployment Written Review

3.6.3 [PROGRAM REVIEWS](#)

- Operations Evaluations
- Fire Program Review
- FIREBASE Review

[Exhibit 3-6-1: SAMPLE CLOSE-OUT REVIEW WITH IC MANAGEMENT TEAM](#)

[Exhibit 3-6-2: FIRE MANAGEMENT PROGRAM REVIEW](#)

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Responsibilities\]](#) [\[Planning\]](#) [\[Activities\]](#)



3.1 WILDLAND FIRE PREPAREDNESS

3.1.1 INTRODUCTION

Preparedness is the process of planning and implementing activities prior to wildland fire ignitions. This process includes actions which are completed on a routine basis prior to each fire season as well as incremental actions conducted in response to increasing fire danger. Fireline preparation and fuel hazard reduction operations for resource protection are examples of this type of routine action.

As fire danger increases, the level of preparedness must increase. Preparedness actions are preplanned and delineated by staffing classes in the step-up plan for refuges and the mobilization plans for regions and the Fire Management Branch.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

- Fire-related data processing systems
- Fire season delineation
- Step-up planning
- Pre-season risk analysis
- Pre-attack planning
- Supplies, materials and equipment
- Fire season preparedness evaluations
- Emergency preparedness
- Pre-positioning resources

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

Servicewide preparedness program objectives are stated in this guideline. Refuge preparedness objectives are stated in each refuge's Fire Management Plan.

3.1.2 RESPONSIBILITIES

Fire Management Branch/Regional Responsibilities. The Fire Management Branch and Regions will:

- Provide emergency assistance and dispatch capability for fire overhead and provide supplies and equipment for inter-refuge, inter-Region and interagency situations as specified in Interagency, National, and Regional Mobilization Plans.
- Allocate funding to accomplish Servicewide priorities.
- Facilitate training beyond that identified as refuge-level responsibilities.
- Maintain interagency contacts and provide for necessary Regional and national interagency agreements.

Refuge Responsibilities. Each refuge with a fire program will:

- Incorporate preparedness considerations in its Fire Management Plan.
- Maintain a cache of supplies, materials, and equipment sufficient to meet Normal Unit Strength requirements.
- Maintain fully qualified personnel commensurate with FIREBASE analysis.
- Operate fire-related data processing systems to enter, archive, retrieve and interpret information for fire management planning and operations.
- Prepare a step-up plan based on staffing classes derived from a NFDRS or CFFDRS index.
- Maintain record systems, weather data, maps and other related information.
- Prepare pre-season risk analysis.
- Provide a dispatch system for fire management resources within and adjacent to the refuge.
- Maintain detection and initial attack capabilities.
- Prepare appropriate pre-attack plans, including local mobilization guides.
- Develop and maintain agreements to coordinate interagency operations.

3.1.3 PREPAREDNESS PLANNING

Preparedness planning must be conducted and coordinated at all organizational levels for optimum preparedness. Bureaus will cooperate in the development of interagency preparedness plans to ensure timely recognition of approaching critical wildland fire situations; to establish processes for analyzing situations and establishing priorities, and for implementing appropriate management responses to these situations. Preparedness activities are funded by FIREBASE funds.

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

NICC and the geographic coordination centers will be the levels at which this type of planning will be done. The Interior Fire Coordination Committee further determined that if a preparedness plan developed at the refuge level would not be significantly different than the plan developed at the coordination center level, then it would not be necessary to duplicate this planning effort.

In most cases, the development of a preparedness plan at the refuge level is probably not necessary. If a refuge does deem it necessary to develop its own preparedness plan, it should step-down from the geographic coordination center preparedness plan.

The operational planning needed at the refuge level is a plan that identifies what actions should be taken under certain weather conditions, what actions are required if a fire occurs in a given area of the refuge, what resources will be needed under certain conditions, what are the key indicators that should trigger certain preparedness actions. These types of operational plans support the objectives established in the refuge Fire Management Plan.

There are many names for the type of operational plan that covers these areas: step-up plan, pre-attack plan, initial attack plan, staffing plan (previously manning plan). The Fish and Wildlife Service will utilize a step-up plan, dispatch plan and a pre-attack plan. These will be the minimum documents needed for most refuges. Refuges protected by a cooperators through an agreement will need to incorporate some aspects of each operational plan into an operating plan that will be used to support the agreement.

Fire-related Data Processing Systems

The National Fire Danger Rating System (NFDRS) or the Canadian Forest Fire Danger Rating System (CFFDRS) is the process by which relative fire danger indices are assigned. Fire weather information is integrated with fuel and topographic information to arrive at various fire danger indices.

NFDRS or CFFDRS can be operated through the Weather Information Management System (WIMS), Alaska Initial Attack Management System (AIAMS), PCDanger, nomograms, or field calculators.

FIREFAMILY+ is a computer program that uses historic weather data to predict future fire management needs. This program should be utilized in preparedness/operational planning. KCFAST provides PC access to historic weather data for analysis.

Fire Season Delineation

Fire seasons in refuges are defined through FIREBASE analysis which incorporates a 10-year history of fire and staffing class 3 occurrences. This process is described in the Fire Management Preparedness and Planning Chapter, FIREBASE Analysis.

Regional fire seasons will be defined as the composite of their refuges' fire seasons. Regions will establish a process which identifies abnormal fire seasons. Preparedness levels should be adjusted accordingly.

Step-up Planning

- Staffing Classes. Step-up plans are designed to direct incremental preparedness actions in response to increasing fire danger. Those actions are delineated by "staffing classes." Each step-up plan will contain five staffing classes that describe escalations in preparedness activities and staffing. These are approved, predetermined responses to increased fire danger for a burning period, which is defined as that period of the day when fire burns most actively in a given fuel type.
- Burning Index. The burning index (BI), as determined by NFDRS, will be the basis to rank fire danger. It therefore provides the basis for increased preparedness. The BI is designed to reflect the difficulty in controlling a new fire start. For Servicewide planning, the BI will be the standard for making comparisons, etc.

Refuges can use another fire danger index other than the BI if there is sufficient justification. Alternatives, such as the Keetch-Byram drought index or energy release component, may be used. All proposed indexes must be based on objective historic weather data appropriate for each refuge. The same staffing class percentile levels will be used (90th and 97th percentile breakpoints). Regional approval is needed for making the change.

Break points between staffing classes are determined by the cumulative percentages of occurrence of the burning index or other index during the fire season. That information is derived from FIRDAT. For fire management purposes, the most critical break points occur at the 90th and 97th percentiles (these percentiles are automatically identified by FIRDAT). These two points define staffing classes 4 and 5. Staffing classes are determined using the following criteria which define the minimum level of the staffing class:

Staffing Class	Criteria
5	97th percentile (from FIRDAT run)
4	90th percentile (from FIRDAT run)

3	90th percentile/2
2	90th percentile/4
1	0

Adjective classes (low, moderate, high, very high, extreme) for fire danger are generally not used for step-up planning. These are more appropriate for fire prevention programs.

IMPORTANT: Fire danger rating indices are only as good as the fire weather data inputs. Instrument care and consistency of data collection determine the value of derived fire danger indices. The entire preparedness program depends on the quality of this data. At a minimum, data collection will begin at least 2 weeks before the beginning of the fire season and terminate no sooner than the end of the fire season. It is vital that data collectors remember that their readings contribute to a national network and national analysis.

Daily weather observations must come from the same weather station that was used to determine the staffing classes. If a new weather station is used for daily observations, staffing classes must be recalculated from historic weather data from the new station. When using an index derived from the NFDRS, be sure the same version of the NFDRS was used for both the historical and daily observations.

Staffing classes should be recalculated yearly if there are fewer than 5 years of historic weather data, every 2 years if there are from 5 to 10 years of historic weather data, and every 3 years if there are more than 10 years of historic weather data.

- **Fuel Models.** Selection of fuel models is critical in developing an effective step-up plan. The integration of these factors should result in selection of the fuel model which creates the greatest fire management problem. For example, a refuge may have 80% of its fire ignitions in fuel model "XX" with low values at risk and low intensity fire behavior. Another fuel model, "YY," with higher values at risk, experiences 20% of fire ignitions, and these ignitions have been more difficult to suppress. Fuel model "YY" should be selected for the step-up plan. Historical factors which should be considered in selecting a fuel model include:
 - Proportion of ignitions by fuel model
 - Values to be protected by fuel model
 - Fire behavior by fuel model
 - Proposed (in fire management plan) fire classifications (e.g., wildland fire, prescribed fire) and appropriate management responses by fuel model and location.
- **Required Information.** The step-up plan must include the following minimum requirements:
 - Personnel and personnel qualifications needed for each staffing class. This will include initial attack, detection, and monitoring.
 - Provisions for fire prevention and detection in staffing classes 4 and 5.
 - Minimum initial attack response time criteria, including equipment and personnel preparedness and pre-positioning.
 - If and when 7-day staffing is instituted.
 - Daily tours of duty for personnel involved with suppression activities. Staggered work schedules will be used in staffing classes 4 and 5.
 - Provisions for public safety.
- Preparedness funds provide support for preparedness actions conducted in staffing classes 1 through 5. Emergency preparedness funds will only be used to support staffing class 4 and 5 actions.
- **Preparedness levels.** The step-up plan should indicate specific actions to ensure an appropriate level of preparedness for the existing/potential situation.
- **Sample Plan** A copy of a sample step-up plan can be found in the appendix.

Pre-season Risk Analysis

Pre-season risk analysis is the procedure for analyzing present and future fire danger for any given area.

Pre-season risk analysis is a process that requires fire managers to step back, review current and predicted weather and fuels information, compare this information with historic weather and fuels records, and predict the upcoming fire season's severity and duration. It is important to incorporate drought indices into this assessment.

Pre-season risk analysis information can be used to modify step-up and pre-attack plans. It provides the basis for actions such as pre-positioning critical resources, requesting additional funding, or modifying Memoranda of Understanding (MOU) to meet anticipated needs.

Each refuge should select one or more indicators from the following which are most useful in predicting fire season severity and duration in its area:

- Temperature Levels
- Precipitation Levels
- Humidity Levels
- Palmer Drought Index

- Keetch-Byram Drought Index
- Energy Release Component
- 1,000-Hour Fuel Moisture (Timber Fuels)
- Vegetation Moisture Levels
 - Live Fuel Moisture (Brush Fuels)
 - Curing Rate (Grass Fuels)
- Episodic Wind Events (Moisture Drying Days)
- Unusual Weather Events (e.g., early killing frosts, blow downs)
- Fires To Date

If the refuge risk analysis suggests that an abnormal fire season might be anticipated, a refuge should notify its Regional Office and request additional resources commensurate with the escalated risk.

Refuge risk analysis should be compiled at the Regional Office to determine the predicted fire season severity within the Region, and then forwarded to the Fire Management Branch for use in determining Servicewide fire preparedness needs.

Risk analysis is an ongoing process. It should be reviewed periodically and revised when significant changes in key indicators occur. All reviews of risk analysis, even if no changes are made, should be documented.

Pre-attack Planning

The pre-attack plan is a comprehensive compilation of essential fire management information which must be available in the refuge's fire management and/or dispatch offices. Advance preparation of this critical document, which includes information on matters such as water sources and cultural resource locations, saves fire managers considerable time during fire suppression operations.

The pre-attack plan should not be included in the body of the Fire Management Plan. The plan should be reviewed annually prior to the fire season, and revised as necessary. Its contents and structure can range from simple to complex, depending upon refuge-specific needs. A list of considerations for a pre-attack plan can be found in the Fire Management Preparedness and Planning Chapter.

To be effective, the pre-attack plan should include sensitive resource information on matters such as the specific locations of cultural sites and certain endangered species. Fire personnel must ensure that sensitive information in the plan is protected from inappropriate dissemination.

Pre-attack plans will include evaluations of structures and other man-made improvements to ensure that their values (and hazards) are taken into consideration. Criteria and procedures for evacuations and closures will also be addressed, and will include all areas of the refuge accessible to visitors and employees.

Guidelines for Refuge Closure/Evaluation

The following questions are presented as a guideline to assist refuge fire managers in determining the present or predicted necessity for evacuation of all or part of the refuge. The final decision for closure/evacuation will be made by the Refuge Manager. Because of the critical time elements involved in closure and evacuation, this checklist should be completed **any time two or more elements in primary factor A are positive**, and should be kept as part of the refuge's fire records. This analysis should be based on predictions to allow adequate time for implementing the appropriate action.

For purposes of this guideline, key terms are defined as follows:

- Partial closure: Refuge closure to visitors in specified areas.
- Full closure: Refuge closure to visitors at entrances
- Partial evacuation: Removal of employees' families and/or visitors from specified areas.
- Evacuation: Removal of employees' families and/or visitors from the refuge.

The following steps are to be taken to make determinations:

- Analyze each element and check the response "yes" or "no."
- If positive responses equal or exceed negative responses within primary factors A through D, the primary factor should be considered a positive response.
- Primary factor E is considered as a separate determinant
- Employ the following criteria to determine action
 - If factor E is "no" and one other primary factor is "yes," consider full or partial closure.
 - If factor E is "no" and two or more primary factors are "yes," consider partial or full closure and evacuation of visitors
 - If factor E is "no" and three or more primary factors are "yes," consider full or partial evacuation of visitors and employees' families.
 - If factor E is "yes," evacuate visitors and employees' families from the affected area or entire refuge regardless of responses to other primary factors.

FACTORS

	YES	NO
A. FIRE BEHAVIOR (observed or predicted)		
Burning Index, Fuel Model B, 72 or above		
Crowning or spotting observed		
Rate of spread greater than 11 chains per hour		
Fire size: 3 acres or more		
More than one Class B size fire burning concurrently		
TOTAL		
	YES	NO
B. PERSONNEL COMMITTED REFUGE-WIDE		
Usual initial attack forces committed		
Refuge cooperative crews committed		
Refuge incidental firefighters committed		
Fires remaining un-staffed after commitment of above refuge forces		
Relief forces more than 2 hours away		
TOTAL		
	YES	NO
C. OPERATIONS		
Access/egress route likely to be heavily used by suppression traffic		
Extensive air operation in vicinity of developed areas		
Potential incident base location in area which conflicts with routine visitor use		
TOTAL		
	YES	NO
D. LOCATION AND DIRECTION OF SPREAD		
Fire moving toward developed areas		

	YES	NO
E. EXIT		
Only vehicular egress route(s) directly threatened for extended period (i.e., to point where no traffic could safely get through)		

Dispatch Plan

The refuge dispatch plan identifies the resources for fire support on or adjacent to a refuge. This plan must be readily available to all personnel involved in fire suppression activities or dispatching resources to fires. A sample plan is found in the Fire Management and Planning Chapter.

3.1.4 PREPAREDNESS ACTIVITIES

Supplies, Materials and Equipment

- Normal Unit Strength (NUS) - Refuges that have a Fire Management Plan should also have a cache of firefighting tools and personal protective equipment (PPE) adequate to support all refuge initial attack staff. The numbers, types, and distribution of materials in caches will be dictated by the staffing, suppression strategy, fuels and fire history of the refuge. Cache equipment, other than capitalized property, is considered to be the station's Normal Unit Strength (NUS). It is the responsibility of the refuge to establish specific refuge and complex initial attack NUS levels. Requirements beyond the initial attack level will be supported through the regional and national fire cache system. Maintenance of NUS is the responsibility of the refuge. NUS is a maximum level of all items for initial attack fire suppression efforts, not for support of fires exceeding initial attack or prescribed fire activities. NUS will include personal protective equipment and safety items required by personnel for prescribed fire assignments. Personnel ordered for extended attack activities are not to be equipped from the refuge's NUS, but will either come equipped or equipped by a ground support facility. All refuges will develop a NUS list and have it approved by the RFMC. The list will become an attachment to the refuge's Fire Management Plan. Only those approved items may be replaced. The initial stocking of the cache with NUS items is a one-time expenditure of preparedness funds. If additional items are needed, they must be approved through the RFMC. All NUS items are to be maintained in such a way that they are not used for routine refuge operations. This may be accomplished by storing equipment in designated areas protected by a seal or in an individual locked enclosure. The inventory and location of these items should be included in the pre-attack plan. Excess and unneeded supplies and equipment should be transferred to other refuges or interagency caches.
- Once a NUS level of equipment and PPE is established, routine replacement of lost, broken or worn out equipment should be through the normal GSA supply channel. Items can be ordered by using the National Stock Number found in the NWCG National Fire Equipment System Catalog, Part 1: Fire Supplies and Equipment, or through the GSA Wildfire Protection Equipment and Supplies catalog. GSA should be considered the first source of supply, but other sources can also be used
- Supporting Ongoing Fires - Ordering - During wildland and prescribed fire operations, support in the form of NUS supplies, other fire suppression equipment, crews and overhead can be ordered through the local interagency zone dispatch/coordination center. In most areas of the country, your order for supplies and/or equipment will not come directly from NIFC, but from the nearest fire cache operated by another Federal agency. Crews and overhead are brought in using the closest forces concept. Resource Order Forms are available that simplify tracking orders from initiation to receipt. These forms are color coded for overhead, crews, supplies and equipment. Fire Management Officers or Regional Fire Management Coordinators can assist in preparing requests.

NUS Determination Criteria

<u>Item</u>	<u>NUS Formula</u>
Rations, Shelters, Hard Hats, Head Lamps, Goggles, Packs, Line Gear, First Aid Kits, Sleeping Bags, Water Bottles	1 per red-carded individual plus 20%
Tents	1 per red-carded individual
Aramid Pants, Aramid Shirts, Gloves	2 per red-carded individual plus 20% for each size issued
Shovels, Pulaskis, McLeods, Flaps, Fire Rakes (Hand Tools)	2 per red-carded individual plus 10% for each type of tool. Mix of tools is determined by station based on local needs.

Flight Helmets	6 per helicopter contract plus 2 spares. Stations w/o contract aircraft that frequently use helicopters for fire activities should obtain 4.
Back Pack Pumps	1 per 2 red-carded individual
Chain Saws, Portable Pumps, Fold-A-Tank	As approved by the RFMC depending on firefighting tactics.
Foam	15 gallons per engine
Hose - Portable Pump used for hose lays or any size engine	1.5 inch -900 feet 1 inch - 900 feet
Nozzles (1" and 1.5" - total)	2 - Portable Pump 4 - Light Engine 5 - Medium or Heavy Engine Plus 20% for total number of nozzles on engines, water and foam combined
Wyes, Tees, Wrenches, Relief Valves, Hose Clamps, etc.	2 - Portable Pump 2 - Light Engine 3 - Medium Engine 4 - Heavy Engine Plus 10% for each item listed as required in the inventory
Adapters and Reducers (Based on local and anticipated needs)	2 - Portable Pump 2 - Light Engine 4 - Medium Engine 5 - Heavy Engine Plus 10% for each item listed as required in the inventory.

Fire Season Preparedness Evaluation

Each refuge will conduct an annual pre-season fire preparedness evaluation which will address detection, communication, dispatch, and response capabilities. Fire preparedness evaluations will be conducted to determine whether or not the refuge's current training levels, equipment inventories, and organizational structure meet the standards described in the approved Fire Management Plan.

The Interagency Fire Preparedness Review Guide provides a common format for conducting preparedness evaluations. The preparedness guide should be adapted for refuge-specific needs, and used to conduct and document the preparedness evaluation.

Accessing WIMS.

Fire personnel should access WIMS daily. Daily access at a minimum should:

- Retrieve national situation summaries from adjacent agencies in order to determine resource availability.
- Enter fire weather observations. It is critical that these observations be entered into WIMS by the time requested by the State forecaster.
- Retrieve and interpret fire danger indices for the area and adjacent stations.
- Retrieve and interpret fire weather and fire danger forecasts.

WIMS guidelines and annual agency updates provide specific directions for accomplishing these activities. All WIMS operational costs (interactive time costs with the computer, WIMS contract oversight costs, and user terminal charges) will be funded by the Fire Management Branch.

Emergency Preparedness

During the fire season there will be short-term weather events and increased human activity that increase the fire danger beyond what is normal. These types of occurrences cannot be planned or budgeted for as part of the normal fire season. Preparedness planning may call for movement of additional firefighting resources into the area or lengthen the duty day to provide extended initial attack coverage. The duration of this type of event may be from one to a few days and can occur several times during the fire season. The triggering of emergency preparedness funding is the refuge Step-Up Plan and should not be confused with the reason for using severity funding, which is justified by prolonged environmental problems.

The decision to use emergency preparedness funds is made at the refuge level with approval of the Regional Fire Management Coordinator. Authorization for use of emergency preparedness funding will be found in an approved refuge Step-Up Plan when staffing classes reach level 4 or 5. Funding to cover these costs will come from the suppression fund since the reason for incurring increased costs over what is normal is due to potential risk.

Pre-positioning Resources

Fire management resources may be pre-positioned during periods when staffing classes 4 or 5 are in effect, as described in the approved Step-Up Plan, or when a pre-season risk analysis of expected fire severity indicates that predicted initial and extended attack needs will exceed the refuge's normal fire year response capability.

Regional mobilization plans will address the pre-positioning of Regional resources for effective incident response. The decision to pre-position national resources will be made by the Fire Management Branch after assessing Regional and national needs.

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Organization & Tasks\]](#) [\[Program Oversight\]](#) [\[Interagency Agree.\]](#) [\[Initial Action\]](#) [\[Incident Mgt.\]](#) [\[IMT Transition\]](#) [\[Records\]](#) [\[Rehabilitation\]](#) [\[Monitoring\]](#)



3.2 WILDLAND FIRE MANAGEMENT

3.2.1 INTRODUCTION

All wildland fires will have some impact to the ecosystem, the surrounding environment and the social and fiscal concerns of persons in the affected area. It is imperative that management minimize unacceptable impacts on firefighter and public safety and values to be protected within or adjacent the refuge during wildland fire management operations.

[Home](#)

[Policy](#)

[What's New](#)

Department of the Interior policy (620 DM 1) on wildland fire states:

[Preparedness](#)

"Bureaus will ensure their capability to provide safe, cost-effective fire management programs in support of land, natural, and cultural resource management plans through appropriate planning, staffing, training, and equipment"

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Objective](#)

The objective of wildland fire management in the Fish and Wildlife Service is to manage wildland fires at minimum cost consistent with values to be protected and land management objectives while maximizing firefighter safety and minimizing the impacts from management activities. All fire management decisions (including preparedness decisions, i.e., hazard reduction, pre-attack positioning, etc.) will be based on this objective.

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

For purposes of this guide, a wildland fire is defined as any non-structure fire, other than prescribed fire, that occurs in the wildland. Wildland fire management is an emergency operation and takes precedence over all other refuge operations, with the exception of safeguarding human life.

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Introduction](#)

[Organization & Tasks](#)

[Program Oversight](#)

[Interagency Agree.](#)

[Initial Action](#)

[Incident Mgt.](#)

[IMT Transition](#)

[Records](#)

[Rehabilitation](#)

[Monitoring](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Responsibilities](#)

Every Fish and Wildlife Service employee has a responsibility to support wildland fire activities as the situation demands. All personnel involved in wildland fire operations shall meet the current Fish and Wildlife Service wildland fire qualification standards.

See section 1.1.3 for specific responsibilities of Service Fire Management leadership.

[NIIMS and ICS Reference Material](#)

All of the material referenced in this section is available through the Publication Management System. The material may be ordered from the National Wildfire Coordinating Group (NWCG), National Fire Equipment System Catalog Part 2: Publications. If you do not have a catalog contact the Regional Fire Management Coordinator for assistance.

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

- National Interagency Incident Management System - Teamwork in Emergency Management. PMS 700-1 (1984), NFES 1354. Brochure describing National Interagency Incident Management System (NIIMS.)
- ICS Forms Manual, ICS 230-2, NFES-1322. An explanation of ICS forms and instructions for completing them.
- ICS Operational System Description, ICS 120-1, NFES-1355. Contains the following sections: Introduction, ICS Operating Requirements, Components of ICS, Organization and Operations, Complex Incidents, Modular ICS Development.
- Position Manuals. Each manual outlines key duties and gives checklists for positions within the functional areas.
 - FINANCE SECTION, ICS 224-1--5, NFES 1987
 - INCIDENT COMMANDER & STAFF, ICS 220-1--4, NFES 1983
 - LOGISTICS SECTION, ICS 223-1--9, NFES 1986
 - OPERATIONS SECTION, ICS 222-1--9, NFES 1985
 - PLANNING SECTION, ICS 221-1--10, NFES 1984
- NIIMS Wildland Fire Qualifications Subsystem Guide, PMS 310-1, NFES 1414. This guide is part of the Wildland Fire Qualification subsystem, which is designed to provide a nationwide source of firefighting personnel who are qualified to perform fire suppression jobs for which they have been certified. It describes the subsystem, which includes incident command skill and technical specialist positions. It details the physical fitness tests that must be taken and the necessary experience needed in order to qualify for the different fire positions. Organizational complexity and minimum qualifications needed to supervise incidents of varying complexities are stated. The guide itemizes the NIIMS fire position qualifications by title, duties, experience and training needed for each position. A list of definitions on the qualification subsystem is included.
- Fireline Handbook, NWCG Handbook #3, PMS 410-1, NFES 0065. The Fireline Handbook is intended to serve as a field reference guide for wildland fire agencies using the Incident Command System (ICS) in control of wildland forest and range fires. It contains information common to all agencies in the wildland fire community who utilize ICS. The objective of this handbook is to provide an interagency "nuts and bolts" pocket field guide for wildland fire suppression personnel. The handbook is organized so that fireline personnel need only carry that material which is needed to do their job on the fireline.
- Fireline Handbook, Fire Behavior Supplement, Appendix B, PMS 410-2, NFES 2165. Provides basic fire behavior information that enable a person with a moderate level of fire behavior training (S-390) to predict and calculate some basic elements of fire behavior, fire size, and control force requirements.

Wildland Fire Implementation Plan

A wildland Fire Implementation Plan will be prepared for all wildland fires. Only the most complex fires being managed for resource benefits will require completion of all parts of a WFIP. The full WFIP consists of three distinct stages (Stage I-III.) For an estimated 90%+ of all wildland fires, WFIP Stage I decision analysis is produced in the FMP and when wildland fires occur, pre-planned descriptions produce Stage I information.

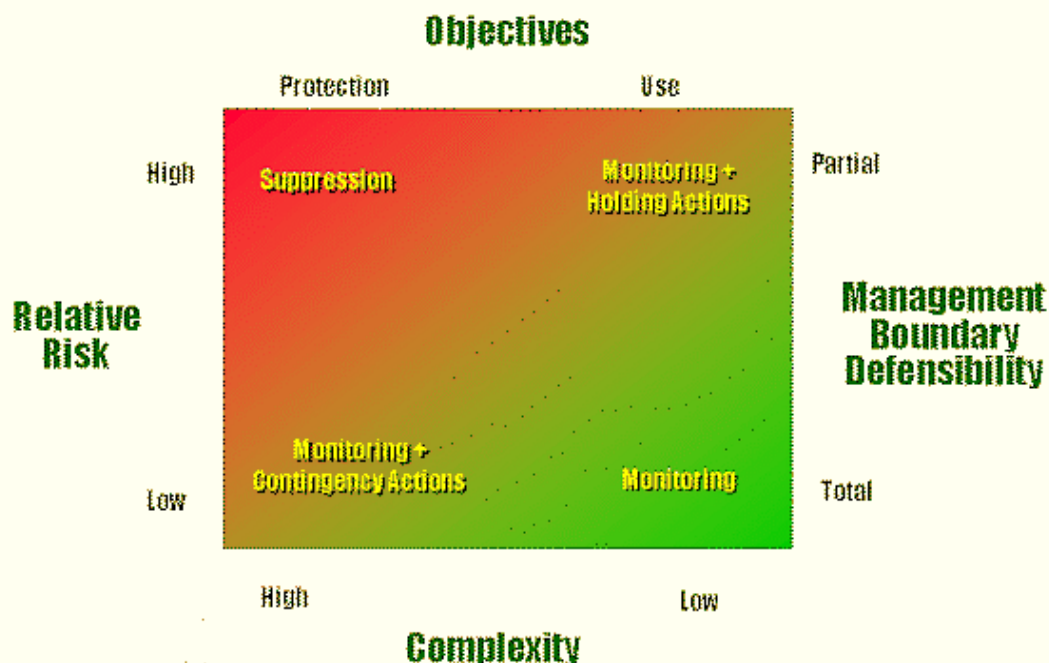
Progressive development of the stages will occur for wildland fires managed for resource benefits or where initial attack is not the selected response. Objectives, fire location, cause, fuel continuity, current fire activity, predicted weather and fire behavior conditions, and risk assessment results will indicate when various stages must be completed.

See section 3.3.1 for a complete description of the Wildland Fire Implementation Plan.

Appropriate Management Response

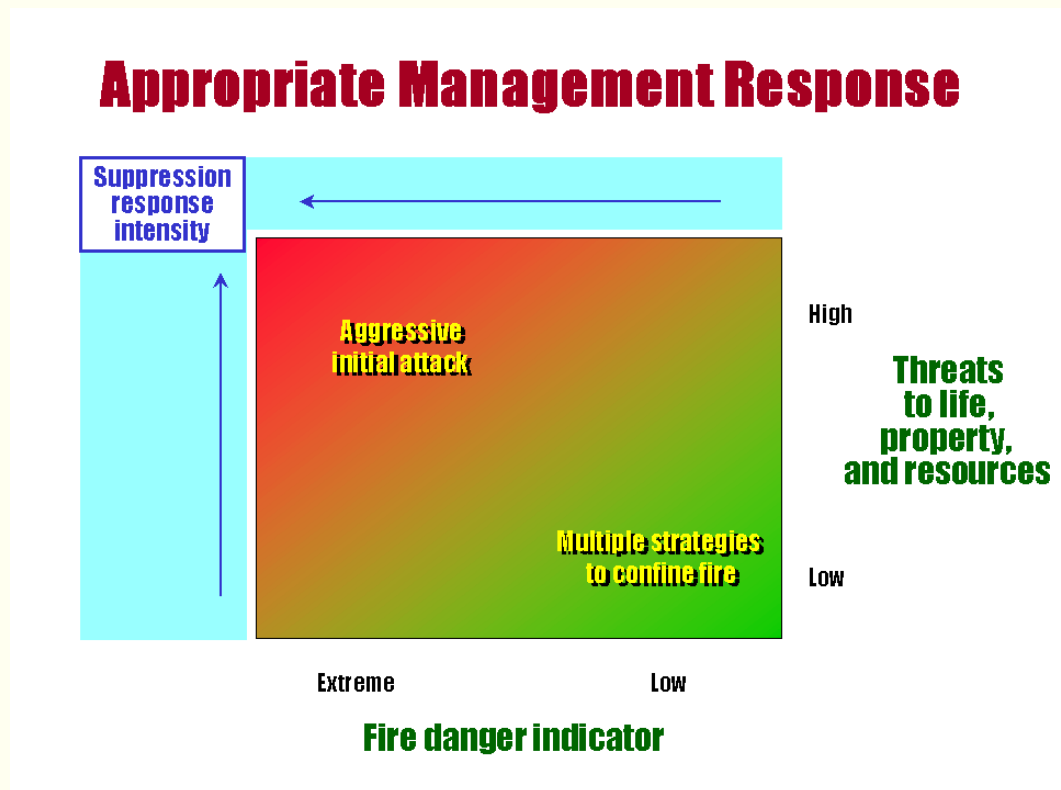
The concept of appropriate management response is integral to fire management policy. Management responses are programmed to accept resource management needs and constraints, reflect a commitment to safety, be cost effective, and accomplish desired objectives while maintaining the versatility to varying intensity as conditions change.

Appropriate Management Response



appropriate management response is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses. It does not lock tactical options to fire type designations. As conditions change, the particular response can change to accomplish the same objective.

The appropriate management response is not a replacement term for prescribed natural fire, or the suppression strategies of control, contain, confine, limited or modified, but it is a concept that offers managers a full spectrum of responses. It is based on objectives, environmental and fuel conditions, constraints, safety and ability to accomplish objectives. It includes wildland fire suppression at all levels, including aggressive initial attack. Use of this concept dispels the interpretation that there is only one way to respond to each set of circumstances.



purpose of giving management the ability to select the appropriate management response on every wildland fire is to provide the greatest flexibility possible and to promote opportunities to achieve greater balance in the program. To clarify the full range of responses available, the following figure utilizes four variables to illustrate development of an appropriate management response.

The chart can be used to estimate appropriate methods to implement desired/necessary responses. To obtain this estimate, lines must be drawn to connect the top and bottom variables and the left and right variables. Where the two lines intersect is a potential management response for the defined conditions. For those situations indicating a suppression-oriented response, a range of responses dealing with only suppression actions is available. The following chart illustrates how the range of suppression-oriented appropriate management responses can vary.

3.2.2 ORGANIZATION AND TASKS

Organization

The approved wildland fire program in the refuge Fire Management Plan will describe the required refuge organization necessary to implement the program. The Fish and Wildlife Service Fire Programming (FIREBASE) staffing analysis can be used to assist in establishing minimum staffing needs for a refuge.

Personnel requirements for individual wildland fires will be noted on the Incident Action Plan. Only those employees meeting the standards set forth in the Training, Qualifications and Certification section of the Fire Management Preparedness and Planning chapter can be utilized on a wildland fire. Employees of other agencies may be utilized if they meet these standards. Refuges and regions may also set higher qualification standards than those required by the national system, but may never establish lower qualification standards.

Organizational Analysis

A committee approach, involving key staff, has been found to be an effective method of reviewing and evaluating fires and is a recommended technique to provide continuing review and oversight. A key function of both the initial and subsequent reviews is to certify that the wildland fire organization, as

defined in the Fire Management Plan is available and in place. Since the involvement of the Refuge Manager in the certification process is critical, he or she is strongly encouraged to participate in the committee meetings. Where needed, the analysis should include an air operation plan (ICS-220 or equivalent), a communications plan (ICS-205 or equivalent), and/or an ignition plan.

3.2.3 PROGRAM OVERSIGHT

Regional Fire Management Coordinators are responsible for overseeing and surveying all wildland fire activities within their region. Reviews of the Wildland Fire Situation Analysis is recommended as a minimum, but direct contact with refuges may be necessary in order to stay apprised of complex situations.

The Regional Director's task is to assure that all wildland fires comply with Fish and Wildlife Service policy and guidelines and that available funding is not exceeded. On rare occasions circumstances or situations may exist which require the Regional Director to intervene in the wildland fire decision process. Should regional intervention on a fire become necessary, the region will consult with the Refuge Manager and an appropriate response be initiated on the fire in question, or operational deficiencies will be corrected.

Each region, in consultation with refuges, will develop its own criteria for triggering regional office intervention. Regions and refuges must agree on regional contingency plans before they are put into place. These plans will address situations in which funding and/or suppression resources are insufficient to meet the current needs of all wildland fires within the region or in which there is a departure from wildland fire program standards.

Regions will develop a standard procedure for prioritizing multiple wildland fires used to achieve land use objectives and determining which ones will be allowed to continue and which ones will require an appropriate management response, including decision criteria for enacting regional contingency plans that call for another fire management strategy.

Regions will also define specific situations which would prevent the continuation of the current management strategy or limit the acceptance of additional wildland fires used to achieve land use objectives. These must include, at a minimum, safety violations or policy deviations. In the case of a situation which is immediately correctable, the refuge should be offered the option of making the correction and continuing the wildland fire.

Records of regional intervention and decisions will be made in writing and will become part of the permanent record for that fire. The record must include the rationale for the decisions and certification by the regional fire management coordinator that an appropriate action was initiated to implement the decisions.

3.2.4 INTERAGENCY AGREEMENTS AND COMMITMENT

Wildland fire programs must adequately consider the impact on other interagency programs and resources. Regions with wildland fire programs will cooperatively develop regional and national contingency plans and procedures and provide the appropriate program of monitoring and direction, including curtailment of prescribed fire activities when necessary because of competition for fire suppression resources.

Refuges with wildland fire programs on lands that abut neighboring lands also under wildland fire management will develop mutually agreeable fire management plans or interagency agreements to amend existing plans. Common prescriptions and management responses to fire occurrences, clear understanding and implementation of funding procedures, and policies for managing fires that cross agency boundaries must be included. Where agreement on prescriptions or other decision criteria are not possible or desirable, buffer zones must be defined, along with the management actions to be taken when fires progress into those zones.

3.2.5 INITIAL AND EXTENDED ACTION

Initial Action - No Approved Fire Management Plan

Every wildland fire must receive appropriate initial action (IA). If no approved Fire Management Plan exists, then the only available option is suppression of the wildland fire and appropriate action will be taken immediately. Common sense must be used in suppression actions considering firefighter and public safety, values to be protected, least cost, and resource damage caused by the suppression action. The goal in initial action is to limit damage to values to be protected while minimizing burned area and to prevent the escape of the fire. If the initial action is unsuccessful, a Wildland Fire Situation Analysis will be prepared to determine the next set of management responses.

Initial Action - Approved Fire Management Plan

If an approved Fire Management Plan exists, the initial action follows that outlined in the Fire Management Plan. The presence of an approved fire management plan allows the refuge to implement the full range of appropriate management responses. It does not mandate that a refuge make use of the full range of appropriate management responses. The full range of appropriate management responses runs the spectrum from aggressive suppression to managing fires to accomplish resource objectives. Each refuge will designate their specific management responses, which may not include managing fires for resource benefits.

See section 3.3.1 for a description of actions when implementing a wildland fire for resource benefits.

Initial Action - Human-caused Fire

Fire Management Plans will clearly state that appropriate management responses for human-caused wildland fires will not include resource benefits as a consideration. The only option available is an appropriate management response.

Closest Forces

The use of closest forces, i.e., the nearest available appropriate resources to respond to an incident, must be covered by cooperative agreements or memoranda of understanding with adjacent agencies or fire protection organizations. These agreements will be part of the Fire Management Plan. Orders for additional resources will be placed in accordance with existing agreements including the designated regional/zone dispatch.

Extended Action

Extended action occurs when a fire has not been contained or controlled by the initial action forces usually within the first burning period and continues either until transition to a higher level incident management team is completed or until the fire has been contained or controlled. Extended action requires a Wildland Fire Situation Analysis to guide the re-evaluation of fire management strategies.

3.2.6 INCIDENT MANAGEMENT CONSIDERATIONS

Minimum Impact Operations

Utilizing minimum impact fire management tactics is a desirable goal of the Fish and Wildlife Service if the resource objectives can be achieved. Minimum impact tactics is defined as the aggressive application of those strategies and tactics which effectively meet management objectives with the least cultural and environmental impact. Minimum impact operations require that short- and long-term values at risk be evaluated and compared to suppression costs. This is a difficult task and is usually subjective. The decision(s) to use minimum impact tactics should be documented in the Fire Management Plan and/or WFSAs. At no time should minimum impact tactics be used if suppression objectives cannot be accomplished.

The change from FIRE CONTROL to FIRE MANAGEMENT has added a new perspective to the role of

fire manager and the firefighter. The objective of putting the fire "dead-out" by a certain time has been replaced by the need to make unique decisions with each fire start, to consider the land and resource objectives, and to decide the appropriate management response which result in minimum costs and resource damage.

Two major areas that pose great challenge are suppression and mop-up. Traditional thinking that "the only safe fire is a fire without a trace of smoke" is no longer valid. Fire management now means managing fire "with time" as opposed to "against time." This change in thinking and way of doing business involves not just the firefighter, but all levels of management as well.

Fish and Wildlife Service fire management requires the fire manager and firefighter to select an appropriate management response commensurate with the fire's potential or existing behavior, yet leaves minimal environmental impact.

The intent of this guide is to serve as a checklist for the Incident Commander and Planning Section Chief, Operations Section Chief, Logistics Section Chief, Division/Group Supervisors, Strike Team/Task Force Leaders, Single Resource Bosses, and firefighters. Accomplishment of minimum impact tactics originates with instructions that are understandable, stated in measurable terms, and communicated both verbally and in writing. Evaluation of these tactics both during and after implementation will further the understanding and achievement of good land stewardship ethics during fire management activities.

The following guidelines for minimum impact tactics are for Agency Administrators, Incident Management Teams, and firefighters to consider. Some or all of the items may apply; depending upon the situation; consider:

- Command and General Staff
 - Evaluate each tactic during planning and strategy sessions to see that they meet agency administrator objectives and minimum impact guidelines.
 - Include agency resource advisor and/or local representative in above session.
 - Discuss minimum impact tactics with overhead during overhead briefings, to gain full understanding of tactics.
 - Ensure minimum impact tactics are implemented during line construction as well as other resource disturbing activities.
- Planning Section.
 - Use resource advisor to evaluate and ensure that tactics are commensurate with land/resource objectives, and incident objectives
 - Use an assessment team to get a different perspective of the situation
 - Use additional consultation from "publics" or someone outside the agency, especially if the fire has been or is expected to be burning for an extended period of time.
 - Adjust line production rates to reflect the minimum impact tactics.
 - When a dozer line is needed, use brush blade for line building.
 - Leave some trees randomly in fireline.
 - Ensure that instructions for minimum impact tactics are listed in the Incident Action Plan.
 - Detail objectives for extent of mop-up necessary--for instance: " _____ distance within perimeter boundary."
 - If helicopters are involved, use long line remote hook in lieu of helispots to deliver/retrieve gear.
 - Anticipate fire behavior and ensure all instructions can be implemented safely.
 - Consider coyote camps versus fixed camp site in sensitive areas.
 - In extremely sensitive areas, consider use of portable facilities (heat/cook units, latrines).

- Operations Section.
 - Emphasize minimum impact tactics during each operational period briefing.
 - Explain expectations for instructions listed in Incident Action Plan.
 - Consider showing minimum impact slide-tape program or video to the crews upon arrival at airport/incident.
 - Consider judicious use of helicopters--consider long lining instead of helispot construction.
 - Use natural openings so far as practical.
 - Consider use of helibucket and water/foam before call for air tanker/retardant.
 - Monitor tactics and conditions.
 - Distribute field guide to appropriate supervisory operations personnel.
- Logistics Section.
 - Ensure actions performed around areas other than Incident Base, i.e., dump sites, camps, staging areas, helibases, etc., result in minimum impact upon the environment.
- Division/Group Supervisor and Strike Team/Task Force Leader
 - Ensure crew superintendents and single resource bosses understand what is expected.
 - Discuss minimum impact tactics with crew.
 - If helicopters are involved, use natural openings as much as possible; minimize cutting only to allow safe operation.
 - Avoid construction of landing areas in high visitor use areas
 - Monitor tactics and conditions.
- Crew Superintendents.
 - Ensure/monitor results expected.
 - Discuss minimum impact tactics with crew.
 - Provide feedback on implementation of tactics--were they successful in halting fire spread; what revisions are necessary?
 - Look for opportunities to further minimize impact to land and resources during the suppression and mop-up phase.

Minimum Impact Operations - Implementation Guidelines

Minimum impact operations emphasizes the job of managing a wildland fire while maintaining a high standard of caring for the land. Actual fire conditions and your good judgment will dictate the actions you take. Consider what is necessary to halt fire spread and ensure it is contained within the fireline or designated perimeter boundary.

- Safety
 - Safety is of utmost importance
 - Constantly review and apply the Situations That Shout Watch Out and Standard Fire Orders.
 - Be particularly cautious with:
 - Burning snags you allow to burn down.
 - Burning or partially burning live and dead trees.
 - Unburned fuel between you and the fire.
 - Identify hazard trees with either an observer flagging and/or glow-sticks.
 - Be constantly aware of the surroundings, of expected fire behavior, and possible fire perimeter one or two days hence.

- Fire Lining Phase.
 - Select procedures, tools, and equipment that least impact the environment.
 - Give serious consideration to use of water as a firelining tactic (fireline constructed with nozzle pressure, wet lining).
 - In light fuels, consider:
 - Cold trail line
 - Allow fire to burn to natural barrier.
 - Consider burn out and use of "gunny" sack or swatter.
 - Constantly re-check cold-trailed fireline.
 - If constructed fireline is necessary, use minimum width and depth to check fire spread.
 - In medium/heavy fuels, consider
 - Use of natural barriers and cold-trailing.
 - Cooling with dirt and water, and cold trailing
 - If constructed fireline is necessary, use minimum width and depth to check fire spread
 - Minimize bucking to establish fireline; preferably build line around logs.
 - Aerial fuels--brush, trees, and snags:
 - Adjacent to fireline: limb only enough to prevent additional fire spread
 - Inside fireline: remove or limb only those fuels which if ignited would have potential to spread fire outside the fireline.
 - Brush or small trees that are necessary to cut during fireline construction will be cut flush with the ground.
 - Trees, burned trees, and snags
 - MINIMIZE cutting of trees, burned trees, and snags
 - Live trees will not be cut, unless determined they will cause fire spread across the fireline or seriously endanger workers. If tree cutting occurs, cut stumps flush with the ground.
 - Scrape around tree bases near fireline if hot and likely to cause fire spread.
 - Identify hazard trees with either an observer, flagging and/or glow-sticks.
 - When using indirect attack:
 - Do not fall snags on the intended unburned side of the constructed fireline, unless they are an obvious safety hazard to crews working in the vicinity
 - On the intended burn-out side of the line, fall only those snags that would reach the fireline should they burn and fall over. Consider alternative means to falling, i.e., fireline explosives, bucket drops.
- Mop-up Phase
 - Consider using "hot-spot" detection devices along perimeter (aerial or hand-held).
 - Light fuels:
 - Cold-trail areas adjacent to unburned fuels.
 - Do minimal spading; restrict spading to hot areas near fireline only.
 - Use extensive cold-trailing to detect hot area.
 - Medium and heavy fuels:
 - Cold-trail charred logs near fireline; do minimal scraping or tool scarring.
 - Minimize bucking of logs to check for hot spots or extinguish fire: preferably roll the logs.
 - Return logs to original position after checking or ground is cool
 - Refrain from making bone-yards: burned/partially burned fuels that were moved would be arranged in natural position as much as possible.
 - Consider allowing larger logs near the fireline to burnout instead of bucking into manageable lengths. Use lever, etc., to move large logs.
 - Aerial fuels--brush, small trees and limbs: remove or limb only those fuels which, if ignited, have potential to spread fire outside the fireline.
 - Burning trees and snags:
 - First consideration is allow burning tree/snag to burn themselves out or down (Ensure adequate safety measures are communicated)
 - Identify hazard trees with either an observer, flagging, and/or glow-sticks
 - If burning trees/snag pose serious threat of spreading fire brands, extinguish fire with water or dirt. FELLING by chainsaw will be last means.
 - Consider falling by blasting, if available.

- Camp Sites and Personal Conduct
 - Use existing campsites if available.
 - If existing campsites are not available, select campsites that are unlikely to be observed by visitors/users.
 - Select impact-resistant sites such as rocky or sandy soil, or opening within heavy timber. Avoid camping in meadows, along streams or lake-shores.
 - Change camp location if ground vegetation in and around the camp shows signs of excessive use.
 - Do minimal disturbance to land in preparing bedding and campfire sites. Do not clear vegetation or do trenching to create bedding sites.
 - Toilet sites should be located a minimum of 200 feet from water sources. Holes should be dug 6-8 inches deep.
 - Select alternate travel routes between camp and fire if trail becomes excessive.
 - Evaluate coyote camps versus fixed campsite in sensitive areas.
- Restoration of Fire Management Activities
 - Firelines:
 - After fire spread is secured, fill in deep and wide firelines, and cut trenches.
 - Water bar, as necessary, to prevent erosion, or use wood material to act as sediment dams.
 - Ensure stumps from cut trees/large size brush are cut flush with ground.
 - Camouflage cut stumps, if possible.
 - Any trees or large size brush cut during fireline construction should be scattered to appear natural.
 - Camps:
 - Restore campsite to natural conditions as much as possible.
 - Scatter fireplace rocks, charcoal from fire; cover fire ring with soil; blend area with natural cover.
 - Pack out all garbage and un-burnables
 - General:
 - Remove all signs of human activity (plastic flagging, small pieces of aluminum foil, litter).
 - Restore helicopter landing sites.
 - Cover, fill in latrine sites.

Air Operations

Air operations during fire incidents will comply with the provisions of Fish and Wildlife Service and/or OAS aviation management guideline.

Personnel Work/Rest Guidelines

- Management of crew, overhead, and support personnel rest to assure safe, productive fire suppression activity is a basic responsibility of all supervisory fire management personnel. The following guidelines assure adequate rest for fire suppression crews, overhead, and support personnel.
- Incident assignments will not exceed 14 days, excluding travel.
- It is recognized that there may be situations where life and property are so imminently threatened or suppression objectives are so close to being met, that an exception is necessary. The exception should be just that and becomes the responsibility of the Incident Commander and the Agency Administrator (AA) (responsible for the incident and the support employee's home unit AA) to closely monitor the situation and jointly agree on extensions.
- When an exception is necessary, the Incident Commander will document, gain approval from the involved Agency Administrators, and include the justification in the incident records for any assignment that exceeds 14 days. If an exception is made to the 14-day limit, the total assignment will not exceed 21 days. No one assignment will exceed 21 days and travel time home will be included within the 21 days.
- There will be no preauthorization for 21-day assignments. Multiple fire assignments after leaving the home unit will count as one assignment. The 14-day count begins at the first assignment and includes subsequent assignments. The guidelines for rest and recuperation (R&R) outlined in the Interagency Incident Business Management Handbook, April 2000, chapter 10, 12.7, will be applied to a 14- or 21-day assignment.

- Details supporting a severity request or the movement of management personnel, i.e., an FMO, will not be included under the 14- or 21-day length of assignment guidelines to the extent the individuals will not be required to return home at the end of 14 days. However, the intent of providing adequate rest and days off will be met. Detail assignments should allow for days off.
- Military mobilizations will still require a maximum 30-day commitment due to preexisting agreements.
- Agency Administrators will monitor the number of back-to-back assignments to ensure the cumulative effect of field duty on and off the station does not become a safety factor. Continual fire duty at the home station can be a safety consideration that is often overlooked. Agency Administrators are to ensure that our initial attack forces and burn crews at the refuge level also meet the intent of the length of assignment guidelines, even though they are not away from the home unit. Indicators of the need for a day off include long shifts but equally important, the actual observation of the physical and mental condition of the employee. This is a critical responsibility of every manager, supervisor and employee.
- Beginning at the time of an employee's involvement in emergency driving, driver shifts will not exceed 15 hours, with no more than 10 hours of actual driving. All work shifts must be followed by a minimum of 8 consecutive hours in non-duty status.
- When days off are planned, arrange for rest and recuperation facilities that provide for:
 - Eight hours uninterrupted sleep.
 - Telephone for personal calls.
 - Facilities for showering and washing clothes.
 - Commissary or other source of essential personal items.
 - Postal service.
- Where practical, recreational opportunities may be provided such as television, bank facilities, boot repair, etc.
- R&R sites that provide the above needs at the least cost should be selected. Incident bases or camps should not be used for R&R sites.

Work and rest management should be addressed in performance evaluations and ratings for overhead, crews, and support personnel.

Extraordinary Fire Situations

Occasionally, instances of fire behavior which exceed the fire organization's ability to achieve management objectives occur. In such instances, neither traditional strategies and tactics nor any amount of additional resources will suppress the fires.

While these isolated incidents occur infrequently, the conditions resulting from extreme resistance to control must be addressed in fire management planning. Under such circumstances, a variety of situations may arise, including unacceptable threats to firefighter safety, substantial losses of acreage, uncontrollable losses of improvements, consistent failure to meet suppression objectives, and overwhelming political involvement.

Fire management during these situations will require extraordinary, nontraditional thinking. The overall management goal to suppress the fire remains constant. In such situations, however, Incident Commanders must shift their focus from perimeter control to an interim strategy for protecting life and high value on and off refuge resources while providing for the safety of firefighting resources until conditions are more favorable for suppression.

Managers should determine those critical values, protection strategies, and indicators which will assist them in identifying and responding to these extraordinary fire incidents, then document them in refuge fire management plans. They should also document in the refuge fire management plans the probability and possible circumstances of such extraordinary fire situations happening based on historic information and refuge fuel types.

3.2.7 INCIDENT MANAGEMENT TEAM TRANSITION

Delegation of Authority

The transfer of authority for suppression actions on a fire is done through the execution of a written delegation of authority from the Refuge Manager to the Incident Commander. This procedure facilitates the transition between incident management levels. The delegation of authority is a part of the briefing package provided to the incoming incident management team. It should contain both the delegation of authority and specific limitations to that authority. A Sample Delegation of Authority ([Exhibit 3-2-1](#)) illustrates.

Transition to Incident Management Team Guidelines

The Incident Management Team must be given a briefing by the Refuge Manager and local Incident Commander. The following guidelines are provided to assist in the orderly transition of fire management responsibilities to incoming incident management teams. Some information will need to be in writing and some may be verbal.

Assumption of Responsibilities:

- The assumption of an incident by a team must be as smooth and orderly as possible. An orderly transition saves money and assures that fire fighting continues in an orderly manner. The team already in place remains in charge until incoming team members are briefed by their counterparts.
- The ordering area should specify the times of arrival and transition by the incoming team. These should be discussed with the incoming Incident Commander to ensure an orderly transition.
- The ordering unit should accomplish the following actions prior to the arrival of the incoming team:
 - Determine incident command post/base location.
 - Order support equipment, supplies, and basic support organization for the incident.
 - Secure an ample supply of appropriate maps.
 - Determine the team's transportation needs and obtain needed vehicles.
 - Schedule agency administrator briefing time and location.
 - Obtain necessary information for the administrator briefing.
 - Obtain necessary communications equipment.

There should be two briefings for the incoming team. The first briefing should be by the Refuge Manager at a site away from the incident. The second briefing should be by the existing Incident Commander at the incident command post. The time needed for transition will depend on the complexity of the incident, the expertise of the existing team, and/or other problems.

Agency Administrator Briefing

This briefing should take place as soon as the incoming team is completely assembled. The Refuge Manager (or designated representative) should provide, at a minimum, the following information to the team:

General Information

- A written overview with the following information:
 - Name and number of incident.
 - Approximate size, location and land status.
 - Name of the current Incident Commander.
 - General weather conditions at the incident site.
 - Fire behavior observed and predicted.
 - Fuel types.
 - Current tactics.
 - Incident command post and base locations.
 - Other strategies, resources and tactics which might have an impact on the incident.
- Signed delegation of authority to the incoming incident commander.
- Local participation in the team organization by resource and agency representatives.
- Information about existing or anticipated unified command organization (if any).
- Names and skills of technical specialists assigned to the incident.

- Refuge fire policy.
- Concerns about resource values, improvements, wilderness and roadless areas, cultural resources, rare and endangered species, etc.
- Priorities for control.
- News media procedures.
- Political considerations.
- Agreements in effect.
- Other agencies already on the incident, agency representatives.
- Desired date and time when team transition will occur.
- Safety issues:
 - Accidents to date.
 - Status of accident reports
 - Areas with existing or potential hazardous materials.
 - Investigation of ignition point and direction on needed follow-up.
 - Entrapment/fire shelter deployment mitigation measures.
- Operations and Planning (Considered in Incident Commander briefing):
 - Strategy
 - Tactics
 - Local unusual fire behavior and fire history in the vicinity of the incident
 - Pre-attack plans available to the team.
 - Incident Status Summary (ICS-209) reporting requirements.
 - Copy of the current ICS-209.
 - Status of current team
 - Status of local agency personnel.
 - Agency capabilities for team operation support.
 - Agency rest and rotation policies.
 - Agency rehabilitation policies.
 - Agency demobilization concerns.
- Logistics:
 - Transportation routes
 - Ordering system to be used
 - Procurement unit in place or ordered.
 - Incident feeding procedures.
 - Available sleeping facilities.
 - Local medical facilities.
 - Nearest burn treatment center
 - Contacts with local law enforcement agencies
- Finance:
 - Fiscal limitations and constraints.
 - Any cost-sharing arrangements affecting the incident.
 - Contracting officer assigned.
 - Potential for claims.

Local Incident Commander Briefing

The local Incident Commander must brief the incoming team upon its arrival. The incoming team should not assume command until thoroughly briefed and the exact time of command change is determined. After briefing, functions will not assume control until the determined transition time. The local team may continue to work in various functions depending upon their physical conditions and any directions received from the agency administrator. Topics to address should be grouped by function:

- General Staff:
 - Incident map.
 - Time of ignition.
 - Point of origin.
 - Fuels (type, loading, moisture).
 - Weather (current and predicted)
 - Topography
 - Fire behavior concerns.
 - Review of existing control plan.
 - A copy of the current Incident Action Plan should be furnished to the team.
 - Identification of any agency representatives already assigned to the incident

- Operations:
 - Current strategy
 - Tactics
 - Aircraft usage and availability.
 - Retardant use (fugitive dyes/foams).
 - Hand crew operations.
 - Dozer/tractor operations.
 - Engine operations.
 - Helibase/helispot locations (map).
 - Helibase crash fire protection.
 - Smoke conditions.
 - Effects on aircraft, vehicle traffic, observation.
 - Responsibilities for initial attack.
- Planning:
 - Availability of aerial photos, usable maps
 - Infrared requests.
 - Availability of water.
 - Duplicating facilities.
 - Weather forecasting resources.
- Logistics:
 - Access routes to the fire line
 - Communications resources.
 - Communications plan available.
 - Medical plan available
 - Known security problems.
 - Feeding facilities available.
 - Sanitation facilities available.
 - Transportation resources available.
 - Traffic plan available.
- Finance:
 - Status of rental agreements.
 - Status of current and anticipated claims.
 - Status of payroll function and time reports.
 - Cost of the incident to date.

Release of Incident Management Team

The release of an Incident Management Team is basically the reverse of the transition to the Incident Management Team from extended attack. The agency administrator must approve the date and time. The incoming local overhead team should have had 24 hours off prior to assuming control of the incident.

The team should not be released from the incident until:

- Management objectives for the fire have been achieved.
- Most operations personnel who are not needed for patrol and mop-up have been demobilized.
- Base/camp have been demobilized, reduced, or are being demobilized.
- Planning Section Chief has prepared a rough copy of fire report and narrative.
- Finance Section Chief should have all known finance problems resolved. Contact made with refuge budget and financial personnel.
- Suppression rehabilitation work is completed or to a point where the agency is satisfied with assuming remaining work.
- Overhead performance ratings are completed.

Incident Management Team Close-out Review ([Exhibit 3-6-1](#))

See section 3.6.2 FIRE REVIEWS, for a discussion about Incident Management Team Close-out Reviews.

Incident Management Team Evaluation

The Refuge Manager must complete a written evaluation of the incident management team. This evaluation should not be completed at the closeout review, but should be completed after sufficient time has elapsed so that incident costs, claims, demobilization, and rehabilitation are essentially complete and can be thoroughly evaluated.

This delay in preparing the written evaluation will also provide the Refuge Manager with the opportunity to evaluate the incident management team's effectiveness with cooperating agencies, the media, and refuge neighbors. However, the written evaluation must be completed within six months after demobilization of the incident management team unless critical safety violations must be addressed immediately and shared with the fire community as a whole.

The delegation of authority, wildland fire situation analysis, and agency administrator's direction shall serve as the primary standards against which the incident management team is evaluated.

The agency administrator will provide a copy of the evaluation to the Incident Commander, and regional fire management coordinator and retain a copy for the final fire package.

The RFMC will review all evaluations and will be responsible for providing a copy of any evaluation documenting superior or deficient performance to the geographic area board managing the incident management team in question. The RFMC will confer with the Fire Management Branch regarding performance evaluation prior to submission to the geographic coordination center.

Factors to consider in a written evaluation of an incident management team are:

- Compliance with Delegation of Authority.
- Compliance with Wildland Fire Situation Analysis.
- Compliance with agency administrator directions.
- Orderly transition; refuge to team/team to refuge.
- Human rights management.
- Personnel safety records.
- Financial performance compares to WFSA predictions.
- Accountability and control of all accountable property.
- Documentation of fire costs.
- Completeness of claims investigations/documentation.
- Media relations.
- Interaction with cooperative agencies/refuge staff/neighbors.
- Effectiveness of rehabilitation.
- Orderly demobilization.
- Completeness of final fire package.

3.2.8 RECORDS

Daily Cost Accounting

Costs associated with wildland fires are charged to the appropriate activity. For specific fires these costs will be relayed to the regional fire management coordinator on a schedule agreed upon with the refuge.

Incident Status Reporting

The status of the incident must be reported at least once every 24 hours. The Refuge Manager may require additional reporting times. The incident status is reported on the Incident Status Summary (ICS-209).

Final Wildland Fire Record

The final wildland fire project record may include the following:

- DI-1202
- Narrative
- Wildland Fire Situation Analysis(s)
- Incident Action Plan(s)
- Daily weather forecasts and spot weather forecasts
- Cumulative fire map showing acreage increase by day
- Total cost summary
- Monitoring data (Wildland Fire Observation Records)
- Critique of fire projections on Incident Action Plan

The refuge Fire Management Plan will identify where these records will reside and assign responsibility for file maintenance.

3.2.9 BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION

Burned Area Emergency Stabilization and Rehabilitation (ESR) Planning is addressed in [Chapter 5](#).

3.2.10 MONITORING

All wildland fires will be monitored to some degree.

- Purpose. Information gathered during fire monitoring is needed to:
 - Provide management with information essential for decision making.
 - Determine if fire management program objectives are being met.
 - Protect human life, property, and natural/cultural resources.
 - Determine if fire is within predetermined criteria.
 - Identify if suppression actions are needed.
 - Assist with contingency planning by identifying barriers to spread, problem areas, locations for holding actions, and required forces.
 - Increase knowledge of fire behavior and effects on refuge ecosystems.
 - Provide historic and administrative record for actions taken on a fire.
 - Determine if designated barriers to fire growth will be effective
- Procedures and Qualifications. Monitoring will be conducted as specified in the refuge Fire Management Plan or monitoring plan. All monitors must be qualified for any assigned duties which may include fire behavior and/or ecological monitoring.
- Monitoring Types. There are three types of monitoring:
 - Remote: Aerial or from a distant location (not on site).
 - Fire behavior: On-site observation of environmental conditions, observed and predicted fire behavior.
 - Fire results: Fire behavior and effects data collected from permanent plots before, during and after the burn.
- Initial Evaluation. Information derived from the initial evaluation of the fire start will be used to:
 - Identify the ignition source and cause.
 - Determine if the fire may be managed to achieve land management objectives.
 - Provide baseline information for adjusting the monitoring schedule and determining personnel needs for monitoring activities.
 - Develop management alternatives for the Wildland Fire Situation Analysis. Possible barriers to fire spread should be identified, or locations for constructed fire lines suggested.
- Monitoring Schedules. Needs for personnel and equipment for monitoring a wildland fire will be based upon:
 - Potential fire size.
 - Rate of growth.
 - Threats to human life, property, and natural/cultural resources.
 - Smoke management and public health concerns.
 - Administrative concerns.
 - Escape potential.
 - Predicted fire behavior (erratic, extreme, and/or long distance spotting).
 - Number of fires in the fire management unit.

- Monitoring Elements. Monitoring will include documentation of the fire's environment, behavior and effects as outlined in the Fire Management Plan. The importance of the impact of both short and long-term weather conditions on fire behavior and effects cannot be over emphasized. The best available local daily weather forecast, preferably a spot weather forecast, should be obtained for each fire or complex of fires. If monitoring activities are on-going, a three to five-day extended forecast should be obtained daily. A thirty-day forecast should be obtained for the anticipated monitoring period, but should only be used cautiously. A drought index indicator should be monitored throughout the year. Depending upon the monitoring level specified in the approved monitoring plan, data on fire effects and associated fire behavior may also be collected. Additional monitoring elements could include
 - Particulate sampling to identify health concerns (if necessary, health advisories should be issued). State air quality organizations or the Fish and Wildlife Service, National Wildlife Refuge System Air Quality Branch may serve as sources for technical assistance and monitoring equipment.
 - Water quality.
 - Wildlife distribution and abundance.
 - Refuge specific concerns.
- Fire Monitor Dispatch. Monitoring personnel will be dispatched in accordance with procedures for wildland fire personnel outlined in the refuge Fire Management Plan or Dispatch Plan.
- Safety. For safety reasons, the on-site fire monitoring team shall be minimally comprised of two individuals. All monitors must wear and carry personal protective equipment (including fire shelters), carry a radio for two-way communications, meet physical fitness standards, and have minimum suppression tools on site. Trainees will be qualified, at a minimum, at the Firefighter 2 level. Other pertinent safety concerns will be included in the refuge briefing package presented to monitors. Qualified personnel should be paired with a trainee.

This page was last modified 01/07/03

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Exhibit 3-2-1: SAMPLE DELEGATION OF AUTHORITY

National Key Deer Refuge and Crocodile Lake National Wildlife Refuge, Big Pine Key, Florida

As of 1800, May 20, 1989, I have delegated authority to manage the Big Buck fire, number 4112, National Key Deer Refuge, to Incident Commander Fred Jones and his Incident Management Team.

[Back](#)

The fire which originated as four separate lightning strikes occurring on May 17, 1989, is burning in Big Pine Key. My considerations for management of this fire are:

1. Provide for firefighter safety.
2. I would like the fire managed under a full suppression strategy with suppression actions done with as little environmental damage as possible.
3. Key cultural features requiring priority protection are: Blue Hole Hammock, overlook boardwalks, refuge headquarters.
4. Key resource considerations are: protecting endangered species by providing aircraft telemetry monitoring of Florida key deer, preserving as much key deer habitat as possible, and avoiding wildlife entrapment situations.
5. Restrictions for suppression actions are no tracked vehicles on limestone or marsh soils except where roads exist and are identified for use, and no retardant will be utilized.
6. Minimum tools for use are Type II/III helicopters, chainsaws, flaps and weed whips.
7. My agency advisor will be refuge biologist Joe Johnson.
8. The NE flank of the fire borders private property and must be protected if threatened. John Flowers of the Big Pine Key fire department will be the local representative.
9. Managing the fire cost-effectively for the values at risk is a significant concern.
10. Providing training opportunities for the South Florida refuge parks personnel is requested to strengthen our organizational capabilities.
11. Minimum disruption of residential access to private property consistent with public safety.

(signed)

Deborah G. Holle

Refuge Manager, National Key Deer Refuge

May 20, 1989

Amendment to Delegation of Authority

The Delegation of Authority dated May 20, 1989, issued to Incident Commander Fred Jones for the management of the Big Buck fire, number 4112 is hereby amended as follows. This will be effective 1800, May 22, 1989.

3. Key cultural features requiring priority protection are: Blue Hole Hammock, overlook boardwalks, refuge headquarters, Poisonwood Hammock, Butterfly Valley.

6. Minimum tools for use are medium and light chainsaws, and weed whips.

12. Use of tracked vehicles authorized to protect Poisonwood Hammock and Butterfly Valley.

(signed)

Deborah G. Holle

Refuge Manager, National Key Deer Refuge

May 20, 1989



U.S. Fish & Wildlife Service

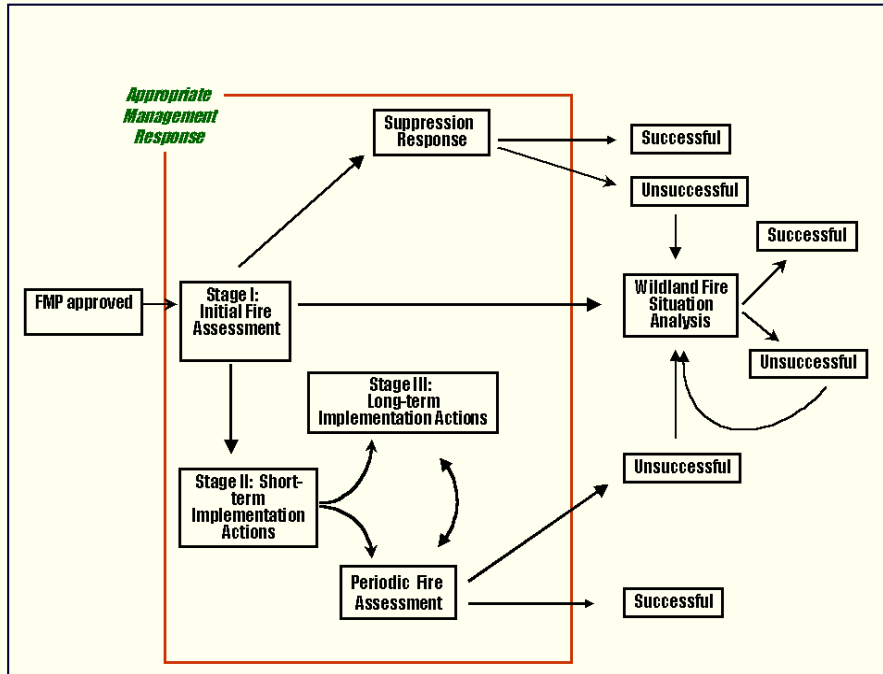
Fire Management Handbook

[\[Planning & Assess\]](#) [\[Implementation\]](#)



3.3 WILDLAND FIRE USE MANAGEMENT

3.3.1 WILDLAND FIRE USE PLANNING AND ASSESSMENT



Those wildland fires managed for resource benefits will have greater planning requirements than wildland fires receiving suppression responses. The flowchart provides an exploded view of the full range of appropriate management responses and necessary steps involved for accomplishing the range of objectives.

Managing wildland fires for resource benefits requires significant documentation to chronicle the decision process of Agency Administrators and fire managers. This documentation process ([Exhibit 3-3-1](#)) has been the cornerstone of successful applications of prescribed natural fire and alternative suppression actions over the past decade. The progressive documentation process

described in this guide is an updated version of these past procedures and is designed to assist managers in implementing fire management activities available under the new policy.

Wildland Fire Implementation Plan

A Wildland Fire Implementation Plan (WFIP) will be prepared for all wildland fires. For an estimated 90+ percent of all wildland fires, WFIP Stage I analysis is produced in the FMP and when wildland fires occur, pre-planned descriptions produce Stage I information. The full WFIP consists of three distinct stages (Stage I - III). A WFIP will progressively develop these stages for all wildland fires managed for resource benefits or where initial attack is not the selected response. Conditions of fuel continuity, current fire activity, fire location, predicted weather and fire behavior conditions, and risk assessment results will indicate when various stages must be completed (full descriptions of all stages are available later in this chapter).

The following table shows critical components of each stage of WFIP completion, requirement status, and completion time frames. Requirement status key:

1. mandatory
2. mandatory, but can be preplanned
3. optional
4. completed if Stage II or Periodic Fire Assessment, Part 2 indicates need
5. completed if fire exceeds management capabilities
6. completed if Periodic Fire Assessment, Part 1 indicates need

WFIP Stage	Planning and Assessment Element	Requirement Status			Maximum completion time frame
		Initial Attack	Other Suppression-oriented appropriate management response	Fire use actions	

[Home](#)

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[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

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[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[Planning & Assess](#)

[Implementation](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

WFIP Stage I: Initial Fire Assessment	Fire Situation	1	1	1	As soon as possible
	Decision Criteria Checklist (Initial GO_NO_GO Decision)	3	1	1	2 hours after first fire detection
WFIP Stage II: Short-term Implementation Action	Short-Term Fire Behavior Predictions and Risk Assessment	3	1	1	24 hours after Stage I completion
	Short-term Implementation Actions	2	1	1	
	Complexity Analysis	3	1	1	
	Stage III Needs Assessment Chart	NA	1	1	
WFIP Stage III: Long-term Implementation Actions	MMA Determination	3	4	4	Within 24 hours after Stage II or Periodic Fire Assessment indicates need
	Fire Behavior Prediction	3	4	4	
	Long-term Risk Assessment	3	4	4	
	Long-term Implementation Actions	3	4	4	
Periodic Fire Assessment	Part 1: Re-validation	NA	1	1	On assigned frequency
	Part 2: Stage III Need Assessment Chart	NA	1	1	
WFSA		5	5	6	Before implementing new strategy

A standard Wildland Fire Implementation Plan form has been developed. Since the WFIP will be prepared progressively (by Stages), specific forms and formats will apply to each individual Stage. As each stage is prepared, it will be attached to previous stages until completed or management of the fire accomplishes the objectives. When the complete WFIP has been developed, it will be a highly specific operational management plan and include all of the following elements:

WFIP Stage I: Initial Fire Assessment

- Fire name
- Fire number
- Jurisdiction(s)
- Administrative unit(s)
- Geographic Area(s)
- Management Code(s)
- Start date/time
- Discovery date/time
- Current size
- Location
- Cause
- Fuel model(s)/conditions
- Current weather
- Forecasted weather
- Current fire behavior
- Forecasted fire behavior
- Availability of resources
- Decision criteria checklist
- Recommended response action

WFIP Stage II: Short-Term Implementation Actions

- Short-term fire behavior predictions for different scenarios
- Risk assessment (may vary in detail and range from relative risk rating to quantitative analysis results)
- Short-term implementation actions
 - Objectives and desired effects
 - Safety considerations
 - External concerns
 - Environmental concerns
 - Threats
 - Short-term implementation actions (include description of action and expected duration)
 - Estimated costs
- Complexity Rating Worksheet

- Stage III need assessment chart

WFIP Stage III: Long-Term Implementation Actions

- Objectives and Risk Assessment Consideration
 - Natural and Cultural resource objectives and constraints/considerations
- MMA Definition and Maps
- Fire Projections and Map
- Weather Season/Drought Discussion and Prognosis
- Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
- Probability of Success
- Threats
 - Threats to MMA
 - Threats to Public Use and Firefighter Safety
 - Smoke dispersion and effects
 - Other
- Monitoring Actions (actions, frequency, and duration)
- Holding Actions (describe holding actions, management action points that initiate these actions, and key to map if necessary)
- Resources needed to manage the fire
- Estimated costs of long-term implementation actions
- Contingency Actions (describe contingency actions, management action points that initiate them, and resources needed)
- Information Plan
- Post-burn evaluation
- Signatures and Date

Periodic Fire Assessment

- Part 1: Re-validation
- Part 2, Stage III Need Checklist
- Signature Page

3.3.2 WILDLAND FIRE USE IMPLEMENTATION PROCEDURES

Wildland Fire Implementation Plan - Stage I: Initial Fire Assessment

Purpose. This is the preliminary stage of the Wildland Fire Implementation Plan and establishes documentation groundwork for further stages. It is both an information gathering stage and decision-making stage. This information provides location, fire cause, administrative information, and fuel, weather, and fire behavior situation. Consists of Fire Situation, Initial GO/NO-GO Decision Criteria Checklist, and Recommended Response Action. Aids Agency Administrator in making the initial decision to manage fire for resource benefits or to suppress by providing location of fire (Fire Management Plan suppression or fire use unit), cause of fire (human or natural caused), and validation of fire use decision (GO/NO-GO decision).

Information Source. Initial fire size-up information, staff completion of Decision Criteria Checklist, and staff development of Recommend Response Action.

Estimated Completion Time. Fire Situation < .25 hours, Initial GO/NO-GO Decision <.5 hour

The Wildland Fire Implementation Plan Stage I represents the Initial Fire Assessment step. It is necessary to establish the foundation information critical to manage the fire. It documents the current and predicted situation, documents all appropriate administrative information, and aids managers by providing them with decision criteria to make the initial decision whether to continue management of the fire for resource benefits or to take suppression action. It also provides the manager with a recommended response action. Stage I consists of two specific components: Fire Situation, and Initial GO/NO-GO Decision.

Fire Situation. The Fire Situation ([Exhibit 3-3-2](#)) consists of two pages of information. The information needed for this step comes directly from the initial fire assessment or size-up. This information will be recorded and can be transferred as needed to later planning stages or to the Wildland Fire Situation Analysis. Necessary information consists of: fire name, fire number, jurisdiction(s), administrative unit(s), geographic area, management code, start date/time, discovery date/time, current date/time, current size, location, fuel model/conditions, weather, fire behavior, and availability of resources.

Decision Criteria Checklist (initial GO/NO-GO Decision)

The Decision Criteria Checklist ([Exhibit 3-3-3](#)) provides the Refuge Manager with a checklist of standard evaluation criteria to determine if the current wildland fire meets criteria to be managed for resource benefits. These criteria assess threats from the fire, potential effects of the fire, risk from the fire, effects of other fire activity on management capability, and allow the Refuge Manager to evaluate other, possibly unforeseen or unanticipated, issues.

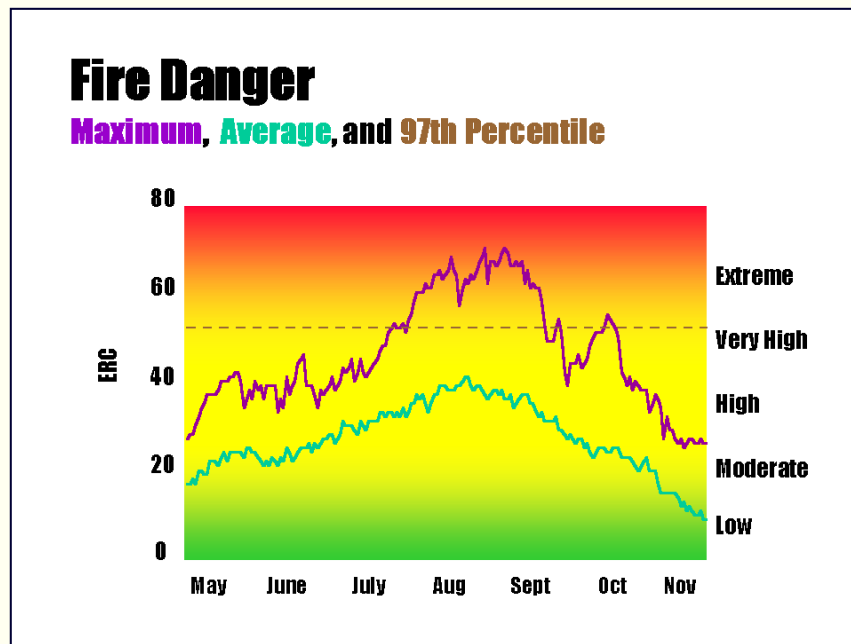
To complete the checklist, the Refuge Manager evaluates the criteria, based on input from his/her staff, and determines if the fire should receive an appropriate management response to achieve resource objectives or to accomplish suppression. A "Yes" response to any of the five elements indicates that management should consider a suppression-oriented appropriate management

response. All "No" answers to the decision elements indicate that the fire is a viable candidate to be managed for resource benefits.

Detailed explanations of decision elements are:

- The first decision element provides an indication of the degree of risk to the identified threats of life, property, and resources. The fact that these threats cannot be mitigated by holding actions provide an indication of the seriousness of the threat. This also indicates that managing the fire for resource benefits has potential flaws in its location, and strong consequences of failure.
- The second decision element relates to objectives for managing fire for resource benefits that should be stated in the Fire Management Plan. The range of desired effects will generally be closely correlated with burning conditions and ultimately, fire behavior.
- The third decision element involves risk assessment for the fire. Since the decision to suppress or manage the fire is time constrained (2 hour decision space), it may not be possible to complete a long-term assessment of risk. For pre-planned management areas it is possible to have weather files prepared to complete the Rare Event Risk Assessment Process (RERAP) and in some cases the level of preplanning may be so complete (pre-planned MMAs and established weather files) that the RERAP assessment will have been done prior to ignition. If this has not been done, or cannot be done within the two hour limit, the RERAP assessment should be completed as soon as possible if the fire continues to be managed for resource benefits. In lieu of the quantitative long-term risk assessment, the Wildland Fire Relative Risk Rating chart has been devised to provide the Refuge Manager with a quick and fairly comprehensive assessment of the "relative risk" of the fire. This indicator can be completed in a matter of minutes and provide information for the Refuge Manager to answer the third decision element of the checklist.

To use this chart, assessments of four variables must be made. The appropriate fire danger indicator can be derived from components or indexes from the National Fire Danger Rating System (NFDRS) outputs. Local fire staff determine the appropriate indicator to use for this variable and develop the numerical value ranges (the NFDRS firefighter pocket card can be used to provide a rapid assessment for this variable).



The NFDRS firefighter pocket card can be generated for any appropriate fire danger indicator by accessing and evaluating historical weather data. The historical time period maximum, average, and 97th percentile levels (or other applicable percentile level) for that fire danger indicator can be created and formatted onto the color card. Significant past fires can be

marked on the chart to provide an indicator of conditions present during that fire. The final chart then provides a quick visual reference that can be formatted as a pocket card and distributed to firefighters, aerial observers, monitors, etc., or can be enlarged to wall-size for quick office reference. The information revealed by this card can be used as the source of input for the decision criteria checklist, or for other input information described in other Wildland Fire Implementation Plan stages. Instructions for creating and using this card are available from the Intermountain Fire Sciences Lab, Missoula, Montana.

The time of season is an indicator of the potential duration of newly ignited fires. The earlier in the season, the longer the potential duration of the fire. The fire size represents the current fire size and should be available from the Fire Situation information. Potential complexity is an estimate of complexity. If time and sufficient information are available to complete the full Wildland Fire Complexity Rating, then the result of that analysis can provide this information. If sufficient time and information are not available, then complexity must be estimated by local fire staff and used for this variable. Complexity can also be pre-planned (pre-planned MMAs and designated in the Fire Management Plan and daily confirmed complexity for each MMA).

To obtain the relative risk rating, connect the top and bottom variables with a single line, then connect the left and right variables with a single line. Determine the relative risk of this fire at the intersection of the two lines. Use the relative risk as input information for the Decision Criteria Checklist.

- The fourth decision element gives an indication of other local and regional fire activity, commitments of unit and cooperator resources, and availability to fill special skill positions from local resources for this fire. If current fire activity precludes the ability to manage fire with adequate resources and skill mixtures, then the response to this element will be "Yes" and a suppression-oriented suppression response is indicated.
- The final decision element allows Agency Administrator discretion in the event there are unknown or unpredicted issues that need to be considered in making the decision to manage the fire for resource benefits.

Once the Decision Criteria Checklist is complete, the decision is clear whether to continue to develop actions to manage the fire for resource objectives or to initiate suppression actions. At the bottom of the Decision Criteria Checklist is a check box for the recommended response action (suppression or other appropriate management response) followed by the Agency Administrator's, or other delegated individual's signature, and date. This will complete the Wildland Fire Implementation Plan Stage I.

Suppression Actions. For most wildland fires, the appropriate management response will be a suppression action. Numerous situations exist where suppression will be needed and desired. Examples of these situations include, but are not limited to:

- The Fire Situation shows that the fire is located in an Fire Management Plan defined Suppression Unit.
- The Fire Situation shows that, regardless of the fire location, it is human-caused.
- The fire is located in an Fire Management Plan defined Fire Use Unit and the Initial GO/NO-GO decision indicates that managing the fire for resource benefits is not within described limits or capabilities at this time.

For these or other situations, the local fire staff will implement an adequate level of suppression action as the appropriate management response. The initial action levels must be defined in the Fire Management Plan.

As stated in the Fire Policy Review, "fires will be suppressed at minimum cost, considering firefighter and public safety, benefits, and values-to-be-protected, consistent with resource objectives." When initial attack or other suppression responses are unsuccessful in accomplishing the objectives, a Wildland Fire Situation Analysis will be the tool to analyze alternatives, select a new appropriate management action, and specify necessary actions.

Wildland Fire Management Plan - Stage II: Short-Term Implementation Actions

Purpose: This stage is primarily an information gathering stage for developing implementation actions. It does involve validation of short-term implementation actions as a decision. This stage will provide managers and staff with information to initiate and continue management of the wildland fire for resource benefits. This stage will provide predictions of where the fire may go, how intense it may burn, how fast it may spread, what the necessary short-term management actions are, what the full complexity is, and if long-term management actions need to be addressed immediately.

Information Source: Fire behavior prediction = generated through the Fire Behavior Prediction System (FBPS) using the BEHAVE system to obtain predictions of fire intensity and rate of spread based on fuel model, wind, topography, and fuel moisture conditions.

Risk assessment = a variety of techniques can provide specific estimates of degree of risk. Example products may include: probability of fire reaching MMA, probability of a season-ending event, description or map of where fire can be predicted to spread to. The minimum risk assessment required is a relative risk chart output.

Short-term implementation actions = developed from staff input, predicted fire behavior, risk assessment, fuel types, fuel continuity, overall objectives. Represents tactical implementation actions.

Complexity analysis = developed from staff input and review of standard complexity elements. Stage III need assessment chart = determined from completion of relative risk, complexity rating, fire behavior predictions, and Fire Situation (Stage I).

Estimated Completion Time: Fire Behavior Prediction < 2 hours, Risk assessment < 24 hours, Short-term implementation actions < 24 hours, Complexity Analysis < .5 hour, Stage III Need Assessment Chart < .5 hour.

The Wildland Fire Implementation Plan Stage II, Short-Term Implementation Actions, represents the stage where management of the fire for resource objectives is initiated and implemented. During this stage, the potential fire behavior is calculated; uncertainty is reduced by assessing risk of the fire, how quickly it could spread, and how intense the fire may burn; fire complexity; necessary immediate and short-term management actions and resources, and evaluation of the need to move directly to the Stage III section.

Components of the Wildland Fire Implementation Plan Stage II and output products are:

- Fire Behavior Predictions for different scenarios - Short-term fire behavior predictions are vital to initial implementation actions because they provide:
 - estimates of fire size and shape at a given time,
 - determinations of resource needs, production rates, and requirements,
 - placement of resources,
 - estimates of behavior under differential weather patterns,
 - estimates of ignition patterns
 - modeling for contingency action planning
 - verifying prediction outputs-The sum total of these efforts can be information on where the fire may go, how fast it may travel, and how intensely it will burn. This will support decisions on initial actions, resource needs, and the overall decisions concerning the appropriate management response.

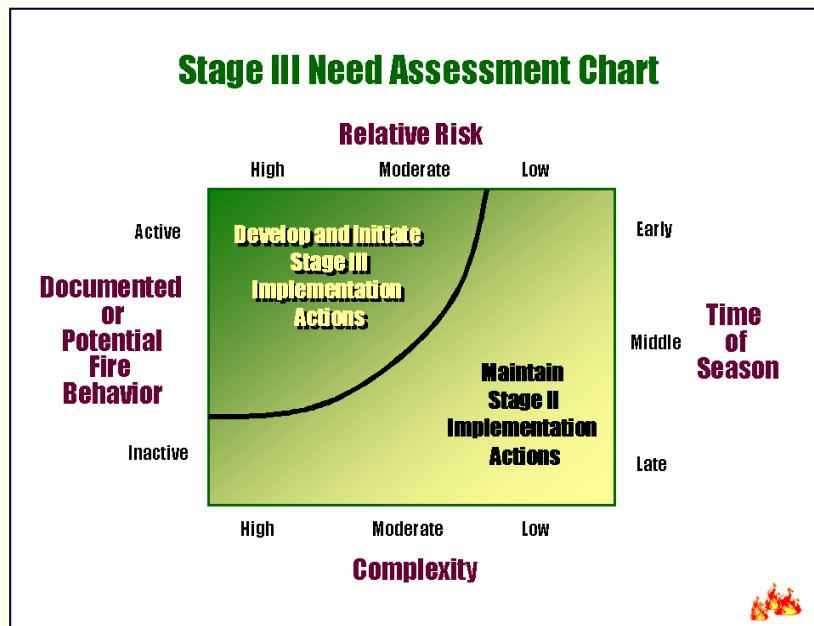
- Risk Assessment - For this stage, the risk assessment can be quickly done. However, if the refuge has the capability to complete full long-term risk assessments through the use of RERAP or FARSITE, it is strongly encouraged that they do so. This will provide the best information available. In the event such quantitative methods cannot be completed in a timely manner, the relative risk chart can be used to obtain a subjective assessment of the risk.
- Short-term Implementation Actions - The Short-term Implementation Actions ([Exhibit 3-3-4](#)) section consists of two pages and describes what the initial or immediate implementation actions will be. These actions can vary significantly, depending upon specific circumstances pertinent to the particular fire. In cases where the fire may be fuel-limited, surrounded by sparse fuels or natural barriers and has only limited spread potential, monitoring may be specified as the necessary implementation actions. In other cases, monitoring plus some form of limited management actions may be necessary. In still other cases, fuel types that the fire is burning in may require immediate actions to delay, check, or direct the spread of fire.
 - Page one covers the categories of:
 - Objectives and desired effects
 - Safety considerations
 - External concerns
 - Environmental concerns
 - Page two covers the categories of:
 - Threats
 - Short-term implementation actions (including description of action and expected duration)
- Complexity Rating Worksheet ([Exhibit 3-3-5](#))- A Wildland Fire Complexity Analysis ([Exhibit 3-3-6](#)) has been developed to aid in evaluating the overall complexity of specific fires. This analysis incorporates as assigned numeric complexity value for specific complexity elements that are weighted in their contribution to overall complexity. The weighted value is multiplied times the numeric value to provide a total element. Then all total values are added to generate the summed complexity numeric value. Breakpoint values are provided for low, moderate, and high complexity. Complexity elements that have been established include:
 - Safety
 - Threats to boundaries
 - Fuels and fire behavior
 - Objectives
 - Management organization
 - Improvements to be protected
 - Natural, cultural, and social values to be protected
 - Air quality values to be protected
 - Logistics
 - Political concerns
 - Tactical concerns
 - Interagency cooperation

In addition to the checklist, a guide to numeric values has been prepared. This guide gives example scenarios for numeric ratings of 1, 3, and 5 points for all complexity elements.

Stage III Needs Assessment Chart

This assessment chart provides the Refuge Manager and staff with an aid in making the decision if the Stage III, Long-Term Assessment and Implementation Actions need to be developed, documented, and implemented immediately, or if the fire can be managed through the established short-term implementation actions until indicated otherwise by the Periodic Fire Assessment. For many wildland fires, fuel continuity and spread potential will be low. In other situations, environmental conditions will preclude active burning and spread. For instances such as these, immediate completion of Stage III of the Wildland Fire Implementation Plan will not need to occur until specific thresholds are reached. These thresholds are assessed subjectively on this chart or through the continued assessment provided by the Periodic Fire Assessment.

The Stage III need assessment process will allow Refuge Managers to prioritize planning needs for multiple fires and to ensure that those having the greatest need will have the necessary planning done in response to management capability and time constraints.



To complete the assessment, local fire staff evaluate the criteria and determine if the fire warrants completion of the long-term implementation actions (Stage III) at this time or if Stage II implementation directions are adequate (if Stage II actions continue, the Periodic Fire Assessment will determine if and when Stage III will be prepared). To obtain the need indication, connect the top and bottom variables with a single line and then connect the left and right variables with a single line. Where the line crosses indicates the need for Wildland Fire Implementation Plan Stage III. The appropriate need is read directly off the chart.

Wildland Fire Implementation Plan - State III: Long-Term Assessment and Implementation Actions

Purpose: To supplement the Fire Management Plan by providing the full

long-term implementation actions necessary to manage the wildland fire to accomplish identified objectives. This stage will provide a definition of the ultimate acceptable geographic size of the fire (represented by the MMA), will consider long-term fire behavior predictions and long-term risk assessment and the likelihood of it reaching the MMA perimeter, and will present those operational management actions necessary for long duration fires that will need mitigating measures to strengthen and defend the MMA.

Information Source: Staff development from local expertise, experience, knowledge, maps, monitoring data, fire behavior predictions, risk assessment, and operational evaluation and identification of tactics and resources. MMA = staff negotiated and developed from objectives, maps, on-the-ground evaluation, aerial observation, monitoring, etc. Risk assessment can be obtained from RERAP, FARSITE, or BEHAVE, or a combination of some or all these techniques.

Estimated Completion Time: MMA determination < 24 hours, Long-term risk assessment < 24 hours (unless FARSITE or other assessment process requires more time), Long-term implementation actions < 24 hours.

This stage represents completion of detailed long-term implementation actions necessary to successfully accomplish the desired objectives. The Wildland Fire Implementation Plan has been progressively developed throughout all stages and this represents the final stage. It presents in-depth tactical implementation information and will be attached to information developed in previous stages.

This stage provides the detailed operational activities and documents the planning completed to ensure adequate mitigation actions have been developed. These actions will provide the best guarantee against escalated fire activity and/or involved area spreading into an unexpected problem or undesirable situation. Mitigation actions are considered to be those on-the-ground activities that will serve to increase the defensibility of the MMA, check, direct, or delay the spread of fire, and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical non-fire tasks and specific fire applications to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and limited suppression actions to limit fire spread and behavior.

Completion of this stage is determined (triggered) by either the Stage III Need Assessment Chart (Wildland Fire Implementation Plan Stage II) or through the Periodic Fire Assessment, Part 2 Long-Term Implementation Action Need Assessment. Once Stage III has been completed, the full Wildland Fire Implementation Plan will have been developed. A standard Stage III: Long-Term Implementation Actions -Term Implementation Actions ([Exhibit 3-3-7](#)) format has been developed consisting of 6 pages. More important than completing these forms is the completion of each of the required content items.

Stage III consists of the following information:

- Objectives and Risk Assessment Considerations
 - Natural and Cultural resources objectives and constraints/considerations
- Maximum Manageable Area (MMA) Determination
- Fire Projections and Maps
- Weather season/drought discussion and prognosis
- Long-Term Risk Assessment (describe techniques and outputs, including maps as appropriate)
- Probability of Success
- Threats
 - Threats to MMA
 - Threats to Public Use and Firefighter Safety
 - Smoke dispersion and effects
 - Other
- Monitoring Actions (actions, frequency, and duration)
- Holding Actions (describe holding actions, management actions points that initiate these actions, and key to map if necessary)

- Resources needed to manage the fire
- Estimated cost of long-term implementation actions
- Contingency Actions (describe contingency actions, management actions points that initiate them, and resources needed)
- Information Plan
- Post-burn evaluation
- Signatures and Date

Maximum Manageable Area (MMA) Determination

All wildland fires being managed under appropriate management response strategies requiring Wildland Fire Implementation Plan Stage I, II, and III will have a defined Maximum Manageable Area (MMA). This is to ensure that there is a clear and common understanding of the authorized size and location of the fire among the various layers of Agency Administrators and cooperators.

The maximum manageable area designates the ultimate acceptable size for a given wildland fire managed for resource benefits. It provides for a closely directed fire management application in a specific area defined by resource objectives, fire and weather prescription elements, social needs, political considerations, and management capability.

All Maximum Manageable Areas will:

- Be based on pre-determined MMAs identified in the Fire Management Plan or be developed as part of Stage III of the Wildland Fire Implementation Plan.
- Be fixed and not subject to change once established and approved by the Refuge Manager.
- Serve as a definition of firm limits of management capability to accommodate the social, political, and resource impacts for all wildland fire managed for resource benefits.

The complex nature of fires and land management precludes the ability of managers to write a set of guidelines or directions that cover all potential situations. Past experiences and recognition of future potential situations require the following considerations regarding the rigid nature of drawing lines on a map.

There may be isolated cases where formal implementation of the Wildland Fire Situation Analysis process because of a wildland fire exceeding an established MMA is not prudent or logical. In these situations, experiences from past actions and anticipated in the future may indicate that the planned fire size will be exceeded by the specific wildland fire on a very small or non-threatening scale. Management options in this situation include:

- Constraining the fire spread to a small or non-threatening overrun or the original acceptable area using available holding forces currently in use, and identified in the Wildland Fire Implementation Plan, Stage II and III. This return must be accomplished within two burning periods.
- In the case of relatively long range spotting, treat an isolated spot generated by this natural process as a separate fire and determine appropriate management action of this new ignition separately from the original wildland fire and based on criteria as they apply to this fire.

If the Refuge Manager or Fire Management Officer determines that the fire cannot continue to be managed-within its original approved boundary, a Wildland Fire Situation Analysis will be utilized to select a new strategic alternative and appropriate management response.

Long-Term Risk Assessment

Decision-making associated with managing wildland fire for resource objectives can have critical impacts. It is important to make the highest quality, informed decisions possible. Decision making is facilitated when supported by as much factual information and prediction of the outcomes or consequences of the decision. Of particular importance is the ability to measure the degree of risk presented by the particular wildland fire.

An array of decision-making support aids is available to support wildland fire complexity assessment. The use of technological tools is appropriate when a specific tool can give the decision-maker all or part of the information necessary to reduce the amount of uncertainty associated with possible outcomes of the decision, to reduce the risk of undesirable outcomes, and to make the best decision possible.

The choice of technique will depend on the information needed and state of the knowledge regarding that subject area. Techniques may range from a subjective, descriptive comparison to a very objective in-depth analysis or sophisticated mathematical model calculated through computerized operations.

The importance of risk assessment is reinforced through the Guiding Principles from the Fire Policy Review Recommendations that state, "Sound risk management is a foundation for all fire management activities," and "Fire management plans are based on the best available science." Technological advances in fire behavior prediction, fire spread estimation, fire effects prediction, smoke production and dispersal, rare event assessment, and fire area simulation now make it possible to obtain better information, reduce uncertainty, and evaluate potential fire outcomes, consequences of failure, and probabilities of success more effectively than ever before. Using this type of information in decision-making promotes better management decisions and ultimately, desirable outcomes, than at any previous time in wildland fire management. As new technology becomes available for application in management situations, it must be utilized to facilitate operational actions to the greatest degree possible.

Specific assessment products useful in evaluating risk include:

- Probability of the fire reaching the MMA perimeter,
- Probability of a season-ending weather event,
- Indications of where the fire may spread, or total area that may be burned by the fire,
- How fast the fire will travel,
- How soon the fire may reach critical sites or the MMA perimeter,
- Indications of how the fire may burn, predictions of intensity and severity,
- Fuel conditions, moisture conditions, departures from average conditions,
- Fire dynamics - indicators of potential rapid escalation in fire behavior,
- Analysis of fire danger indicators, comparison with 10 years statistics,
- Fire history reviews, records of past fires in terms of area burned and type of fires (i.e., low - moderate intensity, surface fire, stand replacement, etc.),
- Predictions of the range of potential fire effects on natural and cultural resources,
- Probability of adverse smoke events and dispersal.

Current state-of-knowledge fire weather, fire behavior, fire effects, smoke management, and other applicable computer software programs and technology ([Exhibit 3-3-8](#)) are available to wildland fire managers for assessing risk and potential of wildland fires and to support management decisions (taken from USDA Forest Service 1997).

Wildland Fire Implementation Plan Development

No standards exist for the makeup of teams responsible for preparation of Wildland Fire Implementation Plans, the duration that they must be in place, and what products they must create. For more complex situation, formalized teams may make the most significant contribution in support of local units and management of the fire. These teams may be developed locally from unit and cooperator personnel or be a formal, established team obtained through the established resource ordering process. Teams must include a leader (preferably Fire Use Manager or higher qualification with fire use experience), a fire behavior specialist (preferably RXFA), and other specialists as needed to support tactical operations, planning, and logistical support needs. In any case, the capability to predict fire behavior and assess risk is critical. This capability can be fulfilled in most situations by a Prescribed Fire Behavior Analyst (RXFA) or Fire Behavior Analyst (FBAN). But, these positions have somewhat different training and experience backgrounds and slightly different skills. Prescribed Fire Behavior Analysts are significantly important in predicting the potential area and extent of burning, assessing long-term risk, and validating the maximum manageable area (MMA). An FBAN can provide fire behavior predictions, access weather observations and forecasts, assess short-term risk, and predict the potential area and extent of burning.

Estimates of fire behavior and risk are prerequisite to successful preparation of a Wildland Fire Implementation Plan. A complete review of MMAS, input regarding fire potential, potential risk, and extended fire behavior predictions for comparisons of expected and experienced severe fire scenarios is required. During Stage I and II, either Prescribed Fire Behavior Analyst or Fire Behavior Analyst positions can be utilized to provide the necessary information. Long-term risk assessment can be conducted through use of the RERAP or FARSITE programs in Stage II, and must be done in Stage III unless not physically possible. During this process, a qualified RXFA [or FBAN who has successfully completed S-492, Long-Term Risk Assessment, and S-493, Fire Area Simulator (FARSITE)] is required. An RXFA does not have to remain continually involved with the wildland fire after completion of the Wildland Fire Implementation Plan. The local fire staff or Fire Use Manager (FUMA) will determine the necessary level of involvement of the RXFA during implementation activities.

As Wildland Fire Implementation Plan Stage III is prepared, the information will be attached to Stage I and II information to complete the Wildland Fire Implementation Plan. In the event that the fire has been burning for a relatively long duration and information contained in Stages I and II is no longer current, it will be updated or replaced during preparation of Wildland Fire Implementation Plan Stage III.

Periodic Fire Assessment

Purpose: This is a step in the implementation process that involves continued assessment and facilitates decisions regarding management of the fire. It provides a process to evaluate the continued capability of the local unit to manage the fire for resource benefits, and to determine if the fire is escalating in complexity and operational needs. If the assessment shows inadequate capability to continue to manage the fire, the decision is reached to proceed to development of a Wildland Fire Situation Analysis. If complexity and operational needs are escalating, the decision is reached to fully define an MMA, develop long-term fire behavior predictions, conduct long-term risk assessment procedures, and define detailed long-term implementation actions (Wildland Fire Implementation Plan - Stage III). This assessment is completed as frequently as specified by the local unit (within maximum assessment frequency guidelines provided below in the procedural description).

Information Source: Fire monitoring information, risk assessment results, current fire activity, fire location, fire size, fire danger indicators, time period of fire season, fire behavior and weather forecasts, and staff input.

Estimated Completion Time: Part 1: Re-validation < .5 hour, Part 2: Stage III need < .5 hour,

For each wildland fire use action, the Refuge Manager (or delegated individual) is required to affirm periodically that the capability to continue management of the fire exists. This stage is intended to preclude the unchecked escalation of an individual fire situation or the total fire management situation without evaluation and adequate planning. A checklist of information must be completed that accomplishes two purposes. First, this checklist affirms the unit's capability to continue management of the fire for resource benefits. Second, this checklist confirms the decision pertaining to the need to develop and document the Wildland Fire Implementation Plan - Stage III. The Periodic Fire Assessment ([Exhibit 3-3-9](#)) consists of three components on two pages. Parts I and 2 constitute the checklist information and a Signature Table documents the Agency Administrator's or delegated individual's

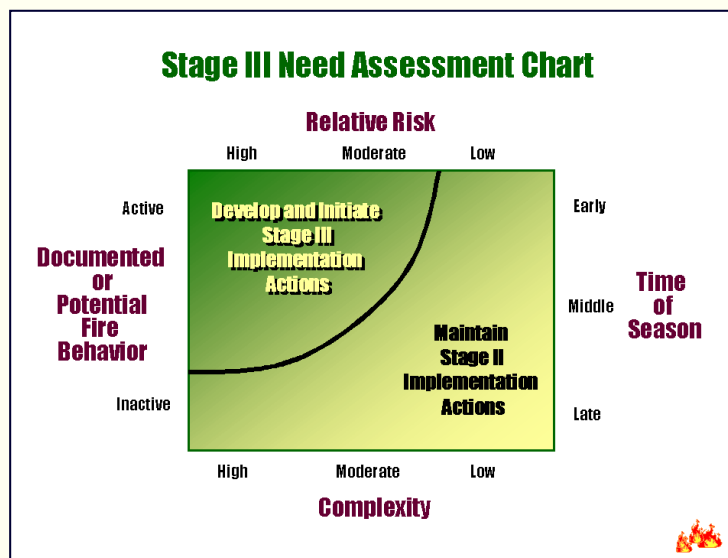
signature.

The Periodic Fire Assessment, Part 1 ([Exhibit 3-3-9](#)) is a process to evaluate capability to continue implementation of the appropriate management response to this fire for achieving resource benefits for a specified period. For Part 1, local fire staff review and complete the assessment checklist. Once this form is initially completed, it does not have to be re-done, but must be reviewed and confirmed on the specified assessment frequency. On the form, the local unit must note the valid dates and the frequency of the assessment. The valid dates are the inclusive dates where the checklist has re-validated continued management of the fire. The "valid date(s)" box can be inclusive of those dates where the assessment remains valid, as indicated by the dated signature. When any decision elements change from "No" to "Yes", a new checklist must be completed for documentation purposes. The assessment frequency is how often the assessment will be reviewed. This frequency can be daily, but if the unit desires, it can be less frequent than a daily requirement.

Recommendation for assessment frequency include:

- grass fuel types = daily
- shrub and timber types = every 1 - 5 days
- Alaska area = every 1 - 10 days

These are recommendations for monitoring and assessment frequency but local units can determine what best meets their needs. However, to ensure that unchecked and unknown escalation of an individual fire situation or the total fire management situation does not occur, continued monitoring and assessment is mandatory. This must occur to facilitate continual evaluation and timely planning.



It is suggested that when refuges establish monitoring and assessment frequency, that they develop a "step-up" frequency based on fire size or levels of fire activity. Then, as an individual fire gets larger, or becomes more active, the monitoring and assessment frequency can correspondingly increase. Conversely, as fire activity lessens and fire size increases become less common, monitoring and assessment can "step-down" and become less frequent. Refuges must identify standards and rationale for establishing assessment frequency, especially "step-up" and step-down" actions. If fire size is used as a determinant, then past burning rates and areas should be used to formulate standards. If fire activity is used, then levels of burning (acres per day, etc.) must be definable and justifiable.

When completing Part I of this checklist, a "Yes" answer to one or more decision elements indicates inability to continue management of

the fire within defined limits of the current response. This triggers preparation of the Wildland Fire Situation Analysis to guide selection of a different appropriate management response alternative.

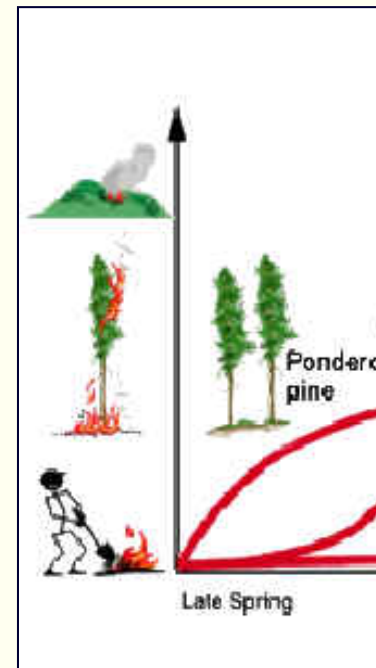
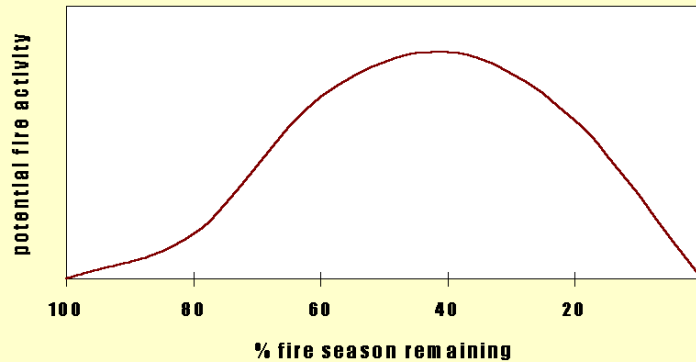
The Periodic Fire Assessment, Part 2 ([Exhibit 3-3-9](#)) is a process that validates conditions. It must be completed periodically for all wildland fires managed for resource benefits where Stage III has not yet been completed. When completing Part 2 of this checklist, a "Yes" answer to two or more elements indicates that Wildland Fire Implementation Plan Stage III: Long-Term Assessment and Implementation Actions should be completed immediately.

The Part 1 checklist is made up of the same decision elements present in the Decision Criteria Checklist plus one additional element. The Wildland Fire Relative Risk Rating Chart and NFDRS Firefighter Pocket Card are again useful in determining answers to specific criteria. The additional decision element in this checklist is related to management and organizational capabilities. If supervisory and tactical needs for this fire exceed known capabilities, then movement to the Wildland Fire Situation Analysis is warranted.

Part 2 of this checklist is made up of decision elements common to the Initial Long-Term Implementation Actions Need Assessment (Stage II). Specific elements in Part 2 evaluate the following information:

- Complexity - determined from the Wildland Fire Complexity Rating,
- Fire danger - determined from the NFDRS firefighter pocket card or NFDRS outputs. Specific fire danger component or index determined by local unit,
- Current time of the fire season - this element is substantially important in determining whether Stage III should be completed immediately or not. Using the figure showing generalized fire season dynamics (Figure 7), local staff can determine if they are at a point in time where the potential maximum fire behavior has not occurred, or if they have passed that point.

Generalized Seasonal Fire Dynamics



The closer the time of season is to that potential maximum, the greater the need to prepare Stage III. Some generalized information is drawn from Williams and Rothermel (1992) which shows a comparison of expected fire behavior over a period of increasing fire danger. To use this chart, local staff orient their specific fire season timeframes along the x axis and determine where they currently are. For example, some western fire seasons will persist from May to October so the x axis represents a period of several months. Other western fire seasons may only last a period of weeks so the time frames are compressed but still representative of the Alpine fire curve. Some eastern fire seasons will run for differing periods and have different orientations that the western seasons (may persist from March to July or February to June, etc.) but still can be oriented to the generalized curve.

- Short-term fire behavior predictions - obtained from the Fire Behavior Prediction System,
- Potential type of burning in relation to fire regime and historical fire behavior - obtained from management objectives and correlation with stand and vegetation conditions and historic fire regimes.

The Refuge Manager or designated individual must sign the re-validation signature page on the specified assessment frequency throughout the time period encompassed by the valid dates. The Periodic Fire Assessment signature authority can be re-delegated to specific positions as appropriate. Refuge Managers can delegate, in writing, the revalidation authority which permits the delegated individual to affirm that management capability exists to continue to manage the fire for resource benefit. If or when fire conditions or complexity levels escalate, Periodic Fire Assessment signature authority will automatically and immediately revert to the Refuge Manager who made the initial delegation of authority. For a particular fire, the responsible Refuge Manager can make the decision regarding delegation of this authority.

This page was last modified 01/07/03

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Exhibit 3-3-1: WILDLAND FIRE ASSESSMENT, IMPLEMENTATION, AND DOCUMENTATION PROCESS

[Back](#)

Fire Name		
Fire Number		
Documentation Product	Product Needed	Product Completed
WFIP - Stage I: Initial Fire Assessment		
• Fire Situation		
• Initial GO/NO-GO Decision		
WFIP - Stage II: Short-Term Implementation Actions		
• Short-Term Fire Behavior Predictions And Risk Assessment		
• Short-term Implementation Actions		
• Complexity Analysis		
Stage III Need Assessment Chart		
WFIP - Stage III: Long-Term Implementation Actions		
Periodic Fire Assessment		
• Part 1, Re-validation		
• Part 2, Stage III Need Assessment		
Wildland Fire Situation Analysis		


[Back](#)
Exhibit 3-3-2: FIRE SITUATION

Fire Name					
Fire Number					
Jurisdiction(s)					
Administrative Unit(s)					
FMP Unit(s)					
Geographic Area					
Management Code					
Start Date/Time					
Discovery Date/Time					
Current Date/Time					
Current Size					
Location:	Legal Description(s)	T.	R.	Sec.	Sub.
	Latitude				
	Longitude				
	UTM:				
	County:				
	Local Description				
Cause					
Fuel Model/Conditions					
Current Weather					

Predicted Weather	
Current Fire Behavior	
Predicted Fire Behavior	
Availability of Resources	


[Back](#)

Exhibit 3-3-3: DECISION CRITERIA CHECKLIST

Decision Element	Yes	No
Is there a threat to life, property, or resources that cannot be mitigated?		
Are potential effects on cultural and natural resources outside the range of acceptable effects?		
Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?		
Is there other proximate fire activity that limits or precludes successful management of this fire?		
Are there other Agency Administrator issues that preclude wildland fire use?		

The Decision Criteria Checklist is a process to assess whether or not the situation warrants continued wildland fire use implementation. A “Yes” response to any element on the checklist indicates that the appropriate management response should be suppression-oriented.

Recommended Response Action (check appropriate box)	NO-GO (Initial attack/suppression action)	
	GO (Other appropriate management response)	

Signature	Date
-----------	------

**Exhibit 3-3-4: SHORT-TERM IMPLEMENTATION ACTION**

Attach Stage I information.

[Back](#)

Action Items	Information specific to this fire
Objectives and Desired Effects	
Safety Considerations	
External Concerns	
Environmental Concerns	
Threats	

Short-Term Actions (describe)	
Estimated Costs	
Title/date	



Exhibit 3-3-5: WILDLAND FIRE COMPLEXITY RATING WORKSHEET

The Wildland Fire Complexity Analysis provides a method to assess the complexity of both wildland fires. The analysis incorporates an assigned numeric rating complexity value for specific complexity elements that are weighted in their contribution to overall complexity. The weighted value is multiplied times the numeric rating value to provide a value for that item. Then all values are added to generate the total complexity value. Breakpoint values are provided for low, moderate, and high complexity values.

[Back](#)

The complexity analysis worksheet is accompanied by a guide to numeric values for each complexity element shown.

Complexity Element	Weighting Factor	Complexity Value	Total Points
Safety	5		
Threats to boundaries	5		
Fuels and fire behavior	5		
Objectives	4		
Management organization	4		
Improvements	3		
Natural, cultural, social values	3		
Air quality values	3		
Logistics	3		
Political concerns	2		
Tactical operations	2		
Interagency coordination	1		
Total Complexity Points			

Complexity Value Breakpoints:

- Low 40 - 90
- Moderate 91 - 140
- High 141 - 200

Complexity Rating (circle) L M H



[Back](#)

Exhibit 3-3-7: STAGE III: LONG -TERM IMPLEMENTATION ACTIONS

Attach Stage I and Stage II information. Update and/or revise Stage I and II as necessary.

Objectives and Risk Assessment Considerations	
Natural and Cultural Resource Objectives and Constraints/ Considerations	
Maximum Manageable Area (MMA)	
Acres in MMA (Attach Map of MMA)	
Fire Projections, Weather, and Map	
Projected Fire Area Under Expected Weather Conditions	For date:
	Area:
Projected Fire Area Under Experienced Severe Weather Conditions	For date:
	Area:
Weather Season/Drought: Discussion and Prognosis	
Long-Term Risk Assessment and Map (if applicable)	

Risk Assessment (Describe techniques utilized and outputs, include maps as appropriate)	
Probability of Success	
Describe Probability of Success	
Threats	
Threats to MMA	
Threats to Firefighter Safety and Public Use	

Smoke Dispersion and Effects	
Other	
Monitoring Actions	
Describe Monitoring Actions, Frequency, and Duration	
Holding Actions	
Describe Holding Actions, Management Action threshold levels that initiate these actions, and indicate on map if necessary	


[Back](#)
Exhibit 3-3-8: USEFUL DECISION SUPPORT TOOLS

Tool	Description	Source
BEHAVE	BEHAVE can be used to predict fire behavior given different fuel loadings and arrangements.	Larry Bradshaw/Bob Burgan Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
CALPUFF	A research-level, three dimensional model designed to predict ground-level concentrations of particulate matter and gaseous pollutants from multiple sources in complex terrain.	Sue A. Ferguson USDA-Forest Service Pacific Northwest Research Station 4043 Roosevelt Way Northeast Seattle, WA 98105-6497 206-553-7815
CONSUME	Predicts fuels consumption for broadcast burns or underburns in logged units in Pacific Northwest timber types and mixed conifer.	Software Support Group Fire and Environmental Research Applications PNW Research Station 40443 Roosevelt Way N.E. Seattle, WA 98105-6497 206-553-7815
CRBSUM	Simulates broad-scale landscape vegetation changes as a consequence of various land management policies.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
DDWOODY	Uses the planer intercept method to predict dead and down fuel loading based on user plot data.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
DEBMOB	Calculates debris prediction using plot data such as stand examinations.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
ECODATA and ECOPAC	ECODATA provides detailed, multilevel intensity sampling methodologies and paper forms for collecting topographic, vegetation, soil, wildlife, hydrologic, riparian, and other information at the plot level. Linked to ECOPAC is a group of analysis programs and models.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
FEIS	Fire effects Information System-provides up-to-date information on fire effects on plants, animals, and ecosystems.	Dennis Simmerman USDA Forest Service Fire Sciences Laboratory IFSL Missoula, MT
FIRE-BGC	Simulates tree growth, organic matter decomposition, litterfall, and other ecological processes using detailed physical relationships. Includes spatial simulation of fire behavior and fire effects on ecosystem components across the landscape. Insect and disease interactions are included in the model.	Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807
FIRES	A PC program that merges fire and weather/index files; allows plotting and analysis of fire occurrence and fire danger.	Larry Bradshaw Fire Behavior Research Work Unit Intermountain Fire Sciences Lab PO Box 8089 Missoula, MT 59807
FOFEM	Computes duff and woody fuel consumption, mineral soil exposure, fire-caused tree mortality, and smoke production for forest stands.	PC version available upon request from: Robert Keane Intermountain Research Station IFSL PO Box 8089 Missoula, MT 59807

FVS	Provides simulated estimates of the future conditions of primary vegetation.	Nick Crookston Intermountain Research Station 1221 So. Main Moscow, ID 83843
FARSITE	PC program that simulates the spread and behavior of fires under conditions of heterogeneous terrain, fuels, and weather.	Pat Andrews Intermountain Fire Sciences Laboratory PO Box 8089 Missoula, MT 59807
MAGIS	Used for planning land management and transportation-related activities on a geographic and temporal basis in the presence of multiple and sometimes conflicting objectives.	Dr. Hans Zuuring School of Forestry University of Montana Missoula, MT 59812
MT CLIM	Mountainous Terrain Microclimate Simulator.	Roger Hungerford Intermountain Forest and Range Experiment Station Research Work Unit Missoula, MT 59807
NPSPUFF	Smoke dispersal model developed in Region 6 that models smoke plume dispersion and concentrations of pollutants (particulate matter and others) from prescribed and wildland fires.	WYNDsoft Inc.
PCHA	PC program that completes the Historical Analysis required for the National Fire Management Analysis System (NFMAS).	USDA Forest Service Region 5 630 Sansome St. San Francisco, CA 94111 415-795-2874
PROBACRE	Assesses the long-term risk associated with the level of protection provided to an area.	Marc Wiitala USDA Forest Service PSW Research Station 208-387-5676
QDEBRIS	Uses planer intercept method to predict dead and down fuel loading based on user plot data.	Cam Johnston Fire Sciences Laboratory Intermountain Research Station PO Box 8089 Missoula, MT 59807
RERAP	Determines probabilities that a wildland fire will exceed an MMA before a fire-ending event (precipitation) will halt spread.	Mike Hilbruner USDA Forest Service PNW Region Portland, OR
RXBURN/ RXWEATHER	Analyzes and assesses burn prescriptions.	Mike Barrowcliff USDA FW-WO, F&AM 208-387-5280 DG: WO1A Cam Johnston USDA FS IFSL 406-329-4810 DG: S22L01A
SASEM	Predicts ground-level particulate matter and visibility impacts from single sources in relatively flat terrain in the Western United States.	Mike Sestak USDI-National Biological Service Environmental Science and Technology Center Fort Collins, CO 80526
SMOKE	Smoke prediction system: determines volume of smoke.	Roger Ottmar Pacific Northwest Forest & Range Experiment Station Portland, OR
SPECTRUM	Helps decision-makers explore and evaluate management choices; provides and integrating framework for multi-resource analysis.	Kathy Sleavin USDA Forest Service WO-EM Analysis Center 3825 East Mulberry Street Fort Collins, CO 80524

SYSDYN	Landscape-scale model on fire-induced changes in vegetation types.	Marc Wiitala USDA Forest Service PSW Research Station 208-387-5676
TSAR3 EPM: Emission Production Model SASEM: Simple Approach Smoke Estimation Model VALBOX: Ventilated Valley Box Model	Three-part smoke dispersion prediction program: each can be used independently or linked to each other.	USDI Bureau of Land Management Wyoming State Office Divisions of Lands and Renewable resources PO Box 1828 Cheyenne, WY 82003
UTOOLS	Geographic analysis software developed for watershed-level planning. Watershed Analysis and Visualization Software.	Forest: R01F12A Cabinet: Public Drawer: UTOOLS Folder: UTOOLS Files: UTOOLS1.EXE UTOOLS2.EXE UTOOLS3.EXE
VSMOKE-GIS	Predicts ground-level particulate matter concentration and visibility impacts from single sources in relatively flat terrain in the southeastern United States.	Leonidas Lavdas USDA Forest Service Southeast Experiment Station Route 1, Box 182A Dry Branch, GA 31020 912-744-0252
Wildland Fire Assessment	PC program that guides users in developing Wildland Fire Situation Analysis and completes Wildland Fire Implementation Plan documentation requirements	Carl Dammann Riverside Fire Lab 3833 South Development Ave. Boise, ID 83705 208-387-5093
WIMS	Weather Information System is an interactive environment to access and manipulate weather data.	Roger Tucker Watershed & Air Management USDA Forest Service Washington, DC


[Back](#)

Exhibit 3-3-9: PERIODIC FIRE ASSESSMENT INSTRUCTIONS

The Periodic Fire Assessment is a process to prevent the unchecked escalation of an individual fire situation or the total fire management situation without evaluation and adequate planning. Part 1 evaluates the capability to continue implementation of the appropriate management response to this fire for achieving resource benefits for a specified period following the assessment i.e., the next 24 hour period or longer, depending upon fire weather and fire behavior forecasts or other anticipated conditions. This assessment will be completed and periodically reviewed for validity. The "assessment frequency" box on page 1 specifies the frequency of assessing the particular fire. Assessment frequencies will be set by the local unit but are recommended to range from every day to every ten (10) days depending on the fuel type and geographic location of the fire. Recommendations for minimum assessment frequency include the following: Grass fuel types = daily; shrub and timber fuel types = every 1 – 5 days; Alaska = every 1 – 10 days.

The "valid date(s)" box is inclusive of those dates where the assessment remains valid, as indicated by the dated signature. When any decision elements change from "No" to "Yes", a new checklist must be completed for documentation purposes. A "Yes" response to any element on the Part 1 checklist indicates that the selected appropriate management response is not accomplishing or will not accomplish desired objectives and that a new strategic alternative should be developed immediately through the use of a Wildland Fire Situation Analysis (WFSA).

The Periodic Fire Assessment, Part 2 is a process that must be completed periodically for all wildland fires managed for resource benefits that do not have a completed WFIP Stage III. For isolated ignitions in fuel-limited situations, Part 2 does not have to be completed. When completing Part 2 of this checklist, if the chart indicates that WFIP Stage III is needed, it must be prepared within 24 hours.

When units establish monitoring and assessment frequency, it may be appropriate to develop a "step-up" system based on fire size or levels of fire activity. Then, as an individual fire gets larger or becomes more active, the monitoring and assessment frequency can correspondingly increase. Conversely, as fire activity lessens and fire size increases become less common, monitoring and assessment can "step-down" and become less frequent. Units must identify standards and rationale for establishing assessment frequency, especially "step-up" and "step-down" actions. If fire size is used as a determinant, then past burning rates should be used to formulate standards. If fire activity is used, then levels of burning (acres per day, etc.) must be definable and justifiable.

The Agency Administrator or delegated individual must sign the Signature Page on the specified assessment frequency.

PERIODIC FIRE ASSESSMENT

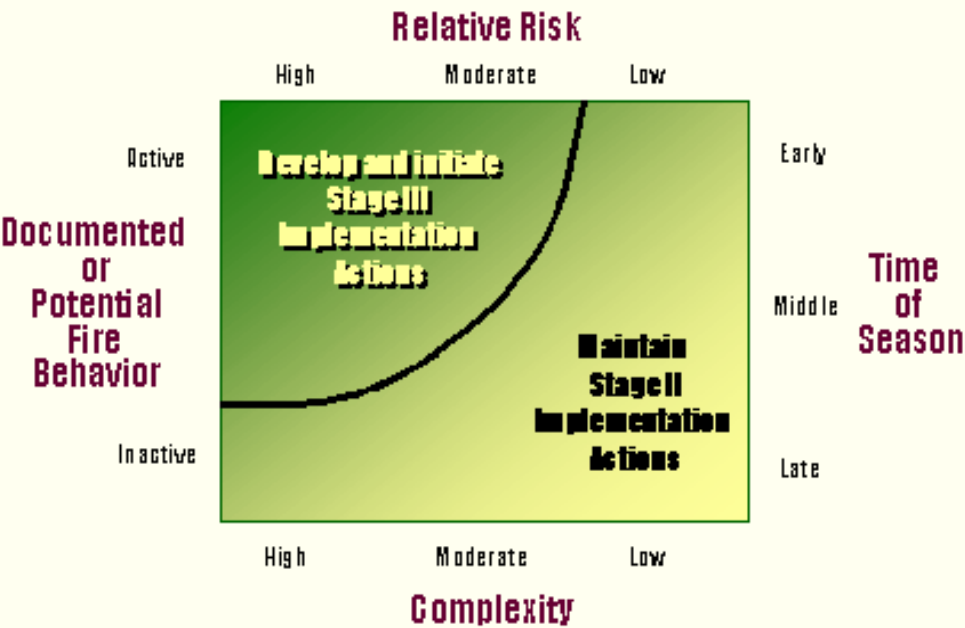
PART 1: RE-VALIDATION CHECKLIST

Decision Element	Yes	No
Is there a threat to life, property, or resources that cannot be mitigated?		
Are potential effects on cultural and natural resources outside the range of acceptable effects?		
Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?		
Is there other proximate fire activity that limits or precludes successful management of this fire?		
Are there other Agency Administrator issues that preclude wildland fire use?		
Do expected management needs for this fire exceed known capabilities?		

PERIODIC FIRE ASSESSMENT

PART 2: STAGE III NEED ASSESSMENT CHART

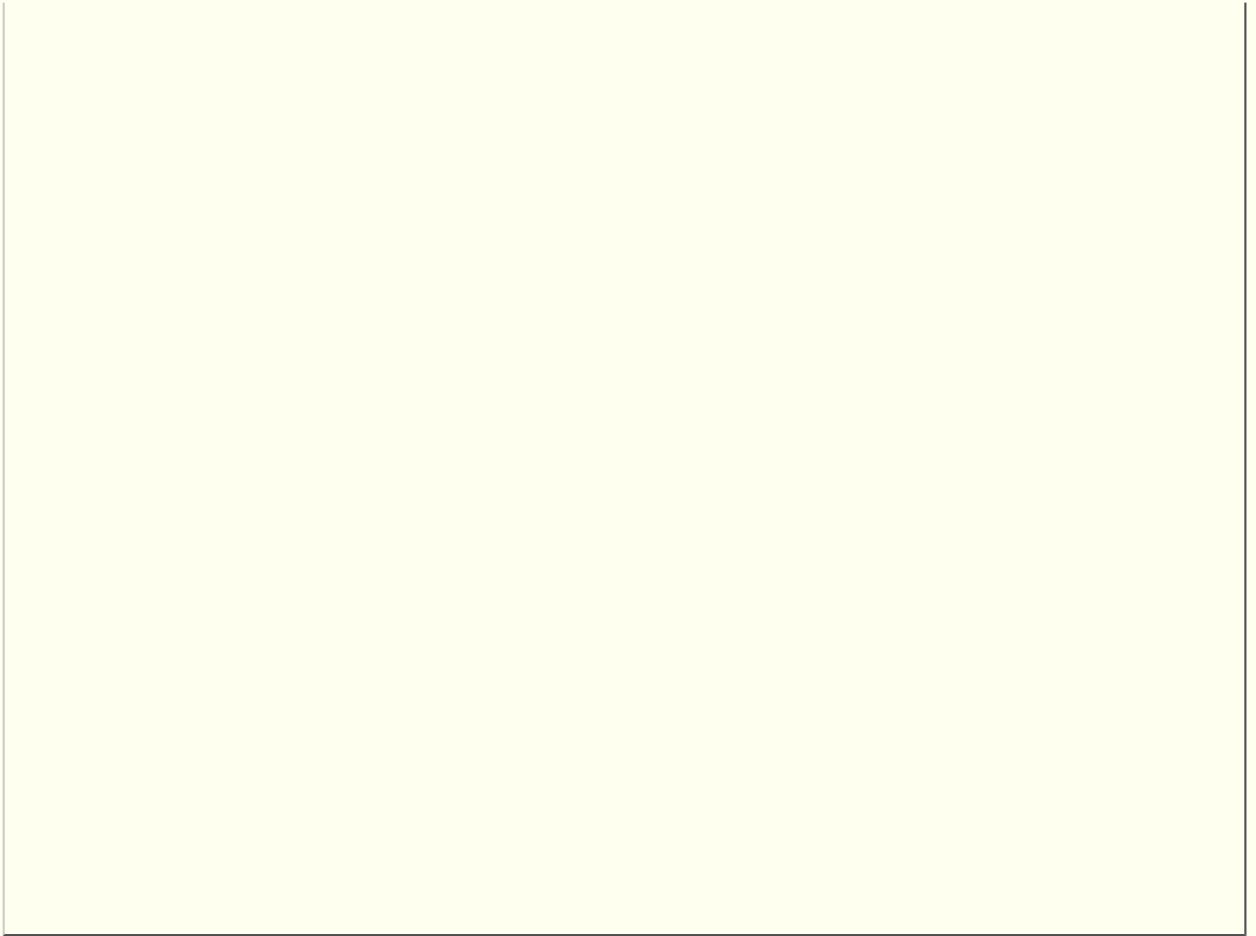
Stage III Need Assessment Chart



PERIODIC FIRE ASSESSMENT

SIGNATURE TABLE

Assessment Frequency		Fire can continue to be managed for resource benefits (wildland fire use action).	Fire can continue to be managed under the short-term Implementation Action.
Valid Date(s)			
Name/Title	Date	Y/N	Y/N/NA





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Fire Management Handbook

[\[Introduction\]](#) [\[Gen. Instructions\]](#) [\[Complexity\]](#) [\[Pre-attack WFSA\]](#)



3.4 WILDLAND FIRE SITUATION ANALYSIS

3.4.1 INTRODUCTION

The WFSA is a decision process that employs a systematic and reasonable approach to determine the most appropriate strategy for a particular situation. Reasonable suppression alternatives are identified, analyzed and evaluated, and are consistent with the expected probability of success/consequences of failure. The agency administrator (Refuge Manager or acting Refuge Manager) shall approve the WFSA and any revisions. Evaluation criteria include anticipated suppression costs, resource impacts, and environmental, social, and political considerations. The evaluation of alternatives must clearly identify the point at which the failure of the alternative is imminent. This becomes the triggering mechanism for re-evaluation of the WFSA.

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[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

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[Operations](#)

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[WFSA](#)

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[Gen. Instructions](#)

[Complexity](#)

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3.4.2 WFSA GENERAL INSTRUCTIONS

- FIRE SITUATION - This portion of the analysis is intended to provide basic information on the fire, including identification of fire, dates and times of the analysis, and the location of the fire.
 - Fuels: Type. Describe the fuels in the area in terms which will be useful for analysis purposes, i.e., mature sagebrush, young ponderosa pine, grass, etc.
 - Fire Behavior: Current. Briefly discuss the fire weather in terms of temperatures, wind and daily patterns. Describe the fire in non-technical terms, such as creeping, spotting, crowning, etc. Discuss the flame lengths, rates of spread, etc. Predicted. Describe what the future course of the fire will be based on the predicted weather patterns, fuels and topography in the presence of the fire, and any other pertinent factors.
- OBJECTIVES AND CONSTRAINTS - Specify criteria which must or should be considered in the development of alternatives. Economic criteria might include closure of all or portions of the refuge, thus impacting concessionaire, or impacts to transportation or communications system. Environmental criteria might also include management objectives, airshed, water quality, etc. Social or external criteria would include any local attitudes toward fire or smoke that might affect decisions on the fire, safety, etc. Other criteria might include the legal or administrative constraints which would have to be considered in the analysis of the fire situation, such as the need to keep the fire off other agency lands, etc.

[Glossary](#)

[References](#)

[Rehabilitation](#)

- **ALTERNATIVES** - Develop alternative plans to control the fire. These will be the results you expect to achieve. All alternatives may have the same general plan, but may have different specific plans. Or there may be different general plans with similar specific plans. A map must be prepared showing each alternative. The map should be based upon the "calculation of probabilities" and include other relevant information. A "no suppression" alternative is not acceptable. An alternative which does not meet all "must" criteria is not acceptable.
 - Strategy. Briefly state the alternative strategies for management of the fire. Use geographic names, locations, etc. Roughly designate each strategy on a map.
 - Allow fire to play a natural role
 - Aggressive Attack
 - Sustained Attack
 - Other strategies as appropriate
 - Tactics. Briefly discuss tactical considerations, including general estimates of suppression forces required to accomplish the strategic plan.
 - Direct attack
 - Indirect attack
 - Parallel attack
 - Containment
 - Surveillance
 - Other tactics as appropriate
 - Resources: Include equipment, aircraft, and personnel resources.
 - Estimated Probability of Success. Base estimates for 0-100% for each alternative strategy.
 - Estimated Date of Control. Estimates for each alternative should be made based on predicted weather behavior factor, barriers, fuels, etc., and the effects of suppression efforts.
- **ANALYSIS OF EFFECT** - The analysis is based on the best estimates of the refuge, resource and fire managers. Fire effects may be negative, cause no change, or may be positive. Employ those evaluations most useful to the specific situation. Some examples: 1) a system which employs a "-" for negative effect, a "0" for no change, or a "+" for positive effect; 2) a system which uses a numeric factor for importance of the consideration (soils, watershed, political, etc.) and assigns values (such as -1 to +1, -100 to +100, etc.) to each consideration, then arrives at a weighted average. It may be that actual dollar values for resources are available. If so, these would be an especially valuable tool. Use those methods most useful to managers. Cost plus loss is the sum of losses from market elements, non-market elements, social elements, and suppression costs.
- **EVALUATION** -
 - Economic. Evaluate any economic criteria against each alternative. Include improvements, visitor use, concessions, fee enhancement, etc.
 - Environmental:
 - Soils. Identify any soil problems which may occur as a result of the fire (water repellency information, etc.).
 - Water/Watershed. Indicate decreases in water quality due to vegetation loss. Consider the potential for increased water yield as a result of vegetation losses.
 - Visual/Recreation. Loss of alternative vegetation, short-term blackened and charred landscape. Consider potential for more attractive views with introduction of vegetative mosaics.
 - Air Quality. Consider the problem of smoke in populated areas or during scenic periods of time. Analyze the vicinity of the fire for those areas where smoke could cause a hazard by obscuring highway or airport visibility. Off-site as well as on-site effects must be considered.
 - Wilderness. Values may include fire as a natural process. Does a wilderness or wilderness study area have a fire management plan allowing a fire to burn under certain conditions? Do managers want fire in the wilderness? Must fire be kept out of the wilderness to preserve wilderness characteristics?
 - Wildlife. Consider the damage done to wildlife due to loss of critical habitat or loss of cover. Positive benefits may include vegetation diversity, increased edges, and more vegetation available for wildlife because of sprouting in burning brush.
 - Fuel Reduction. If a serious hazard has built up and is identified, it may be advisable to allow the fire to remove the fuel.

- Social:
- Safety. No alternatives will be selected which endanger the lives of the public or of firefighters. Any fire or portion of a fire endangering human life will receive immediate, aggressive, and sustained attack.
- Property and Improvements. Any fire or portion of a fire endangering property will receive immediate and sustained attack, consistent with public and firefighter safety.
- Political Consideration. Designate any concerns other public agencies may have in regard to one or all of the suppression strategies, or specify areas of specific concern to the other agencies. This could include such things as use of equipment in and around refuge boundaries, areas of cultural resources, etc.
- Other: Add any additional factors which may be unique to the area or situation, such as rare and endangered plants or animals, or by other considerations not previously mentioned.
- DECISION TREE - The Decision Tree is a discussion and justification as to why preferred alternative was selected based on the evaluation criteria.

A downloadable [Wildland Fire Situation Analysis form](#) in Wordperfect format is provided.

A computerized Wildland Fire Situation Analysis program - WFSA Plus - is an automated alternative to the manual form. The software and user's manual can be found on the [WFSA web site](#).

3.4.3 A GUIDE FOR ASSESSING FIRE COMPLEXITY ([Exhibit 3-4-1](#))

The linked questions are presented as a guide to assist the Refuge Manager(s) and staff in analyzing the complexity or predicted complexity of a wildland fire situation. Because of the time required to assemble or move an Incident Management Team to wildland fire, this checklist should be completed when a wildland fire escapes initial attack and be kept as a part of the fire records. This document is prepared concurrently with the preparation of (and attached to) a new or revised Wildland Fire Situation Analysis. It must be emphasized this analysis should, where possible, be based on predictions to allow adequate time for assembling and transporting the ordered resources.

Use of the Guide:

- Analyze each element and check the response "yes" or "no."
- If positive responses exceed, or are equal to, negative responses within any primary factor (A through G), the primary factor should be considered as a positive response.
- If any three of the primary factors (A through G) are positive responses, this indicates the fire situation is, or is predicted to be, Type I.
- Factor H should be considered after all the above steps. If more than two of these items are answered "yes," and three or more of the other primary factors are positive responses, a Type I team should be considered. If the composites of H are negative, and there are fewer than three positive responses in the primary factors (A-G), a Type II team should be considered. If the answers to all questions in H are negative, it may be advisable to allow the existing overhead to continue action on the fire.

GLOSSARY OF TERMS

Potential for blow-up conditions - Any combination of fuels, weather, and topography excessively endangering personnel.

Rare or endangered species - Threat to habitat of such species or, in the case of flora, threat to the species itself.

Smoke management - Any situation which creates a significant public response, such as smoke in

a metropolitan area or visual pollution in high-use scenic areas.

Extended exposure to unusually hazardous line conditions - Extended burnout or backfire situations, rock slide, cliffs, extremely steep terrain, abnormal fuel situation such as frost killed foliage, etc.

Disputed fire management responsibility - Any wildland fire where responsibility for management is not agreed upon due to lack of agreements or different interpretations, etc.

Disputed fire policy - Differing fire policies between suppression agencies when the fire involves multiple ownership is an example.

Pre-existing controversies - These may or may not be fire management related. Any controversy drawing public attention to an area may present unusual problems to the fire overhead and local management.

Have overhead overextended themselves mentally or physically - This is a critical item that requires judgment by the responsible agency. It is difficult to write guidelines for this judgment because of the wide differences between individuals. If, however, the Agency Administrator feels the existing overhead cannot continue to function efficiently and take safe and aggressive action due to mental or physical reasons, assistance is mandatory.

3.4.4 PRE-ATTACK WILDLAND FIRE SITUATION ANALYSIS

The Pre-attack WFSA ([Exhibit 3-4-2](#)) is a WFSA that is completed by the refuge staff during the pre-attack planning process. It translates refuge fire management objectives into a concise action document which determines initial suppression strategy. To ensure that all important decision criteria are adequately addressed during the initial stages of a fire emergency, selective use of a pre-attack WFSA is recommended. Although this process applies in any refuge with identified suppression zones, it is most useful in those refuges, or portions of refuges, with only one viable suppression alternative. The pre-attack WFSA will serve as the framework for a WFSA if the fire exceeds the parameters of the selected alternative.

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[Back](#)
Exhibit 3-4-1: WILDLAND FIRE COMPLEXITY ANALYSIS GUIDE

FIRE BEHAVIOR: Observed or Predicted	
1. Burning Index (From on-site measurement of weather conditions). Predicted to be above the 90% level using the major fuel model in which the fire is burning.	Yes/No
2. Potential exists for "blowup" conditions (fuel moisture, winds, etc).	Yes/No
3. Crowning, profuse or long range spotting.	Yes/No
4. Weather forecast indicating no significant relief or worsening conditions.	Yes/No
TOTAL	Yes/No

RESOURCES COMMITTED	
1. 200 or more personnel assigned.	Yes/No
2. 3 or more divisions	Yes/No
3. Wide variety of special support personnel.	Yes/No
4. Substantial air operation which is not properly staffed.	Yes/No
5. Majority of refuge initial action resources are committed.	Yes/No
TOTAL	Yes/No

REFUGE RESOURCES THREATENED	
1. Urban interface.	Yes/No
2. Refuge developments and facilities.	Yes/No
3. Cultural sites.	Yes/No
4. Restricted, threatened or endangered species habitat.	Yes/No
5. Unique natural resources, special designation zones, wilderness.	Yes/No
6. Other special resources	Yes/No
TOTAL	Yes/No

SAFETY	
1. Unusually hazardous fireline conditions.	Yes/No
2. Serious accidents or fatalities.	Yes/No
3. Threat to safety of refuge visitors from fire and related operations.	Yes/No
4. Refuge restrictions and/or closures in effect or being considered.	Yes/No
5. No night operations in place for safety reasons.	Yes/No
TOTAL	Yes/No

JURISDICTION	
1. Fire burning or threatening more than one jurisdiction.	Yes/No
2. Potential for claims (damages).	Yes/No
3. Different or conflicting management objectives.	Yes/No
4. Disputes over suppression responsibility.	Yes/No
5. Potential for unified command.	Yes/No
TOTAL	Yes/No

EXTERNAL INFLUENCES	
1. Controversial wildland fire policy.	Yes/No
2. Pre-existing controversies/relationships.	Yes/No
3. Sensitive media relationships.	Yes/No
4. Smoke management problems.	Yes/No
5. Sensitive political interests.	Yes/No
6. Other external influences.	Yes/No
TOTAL	Yes/No

CHANGE IN STRATEGY	
1. Change in strategy to control from confine or contain.	Yes/No
2. Large amounts of unburned fuel within planned perimeter.	Yes/No
3. WFSA invalid or requires updating.	Yes/No
TOTAL	Yes/No

EXISTING OVERHEAD	
1. Worked two operational periods without achieving initial objectives.	Yes/No
2. Existing management organization ineffective.	Yes/No
3. Overhead over extended themselves mentally and/or physically.	Yes/No
4. Incident action plans, briefings, etc. missing or poorly prepared.	Yes/No
TOTAL	<u>Yes/No</u>

**Exhibit 3-4-2: SAMPLE PRE-ATTACK WFSA**

Region: 1 Refuge: Coot Creek NWR

Fire Name: Muck Creek Pre-Attack WFSA

Narrative: This is information to be used as pre-attack Wildland Fire Situation Analysis to provide guidelines to the Agency Administrator/Agency Advisor for development of a joint WFSA with the U. S. Forest Service and Fire Council under Unified Command Situations.

[Back](#)
III. EVALUATION CRITERIA

For each category, develop the Agency Administrator's decisions on specific objectives, expressed as measurable criteria, to be used in the selection of the preferred alternatives.

CRITERIA: Check those criteria which MUST be met:	MUST
Economic: Impoundment (Reservoir) Water Quality	X
Power Line Integrity - Utilities	X
Pintail Valley Complex	X
Concessionaire Facilities	X
Road and Trail Network	
Government Facilities	X
Environmental: Watershed Influences	
Threatened and Endangered Species	X
Soil Protection	
Overstory (Oak-Pine) Protection	
Wildlife Habitat	
Social: Airshed Quality	
Lakeshore Aesthetics	
Hunting, Fishing Habitat	
NEED Environmental Camp	X
In-Holder Developments	X
Crystal Creek Conservation Camp	X
General Outdoor Recreation	

Other: Archeological and Cultural Resources	X
Lighthouse Historic Building	X
Oil Wells	
Mineral Claims	
Neighboring Lands	

IV. ALTERNATIVES

	A	B	C	D
GENERAL PLAN OF CONTROL (STRATEGIC)	Full Fire Control 10 a.m. Control of all fires (1st burning period)	Confine within topographical break, with in 2nd burning period. Fire management using modified suppression	Confine within topographical break with in 3rd burning Fire management using modified suppression	Confine to Whiskey town lands. Fire management using modified suppression
SPECIFIC PLAN OF CONTROL (TACTICAL)	Direct Attack of Perimeter	Direct/Indirect Attack of Perimeter	Indirect Attack of Perimeter	Indirect Attack of Perimeter
PROBABILITY OF SUCCESS	97%	90%	75%	50%
ESTIMATED CONTROL TIME	<12 hrs.	24 hrs.	48 hrs	>48hrs

V. EFFECTS

	A.	B.	C.	D.
Final Estimated Size:	10	100	1000	10,000

MARKET				
ELEMENTS -	n/c	+	-	---
Timber	-	--	---	---
Improvements	n/c	++	++	---
Recreation	n/c	n/a	n/a	n/a
Wilderness	+	+	+++	++++
Hunting	n/c	-	---	---
Fishing	n/c	-	---	---
Forage	n/c	n/c	n/a	n/a
Water				
Sum of Resource Damage	\$ 0	\$ 0	\$ -5	\$ -11
NON-MARKET				
ELEMENTS	-	--	---	---
Air	n/c	n/c	-	--
Visual	n/c	+	++	++
Fuels	n/c	-	-	-
T&E species				
Sum of Resource Damage	\$ -1	\$ -2	\$ -3	\$ -4

SOCIAL ELEMENTS				
Firefighter				
safety	-	--	--	--
Employment	n/c	n/c	n/c	+
Public concern	+++	+	-	---
Public safety	+++	+	-	---
Cultural	+++	+	-	---
Other -	+	+	-	-
Sum of Social Damages	\$ +9	\$ +2	\$ -6	\$ -11
Sum of Losses	\$ +8	\$ +0	\$ -14	\$ -26
Suppression Costs	\$	\$	\$	\$
	2000/ac.	1000/ac.	225/ac.	225/ac.
	20k	100k	225k	2250k
Cost Plus Loss	\$ n/a	\$ n/a	\$ n/a	\$ n/a

VI. EVALUATION

Criteria (Section III)	A.	B.	C.	D.
Economic	Small impact. All-out suppression effort. Minimum damage to structures and developments.	Favorable for wildlife and hunting management. Better access for outdoor recreation. Likely to power facilities and/or threaten structures. Possible litigation for	Advantages in wildlife and hunting offset by forest and watershed damages. Direct threats to power facilities structures and human values. Improved access for general recreation. Possible litigation for	

		escapes.	escapes.	
Environmental	Little direct impact from fire. Full rehabilitation required.	Airshed impacted for short time. Some soil loss. Mosaic effect to fire/unburned islands. Fuel reduction. Potential impact to eagle nests. Full rehabilitation required.	Airshed impacts for 2 days. Some watershed damage. Fuel reduction of fine fuels, creates fire in large sizes, including snags. Potential impact to eagle nests. Extensive rehabilitation required.	Airshed impact for duration of incident considerable. Watershed damaged. Fuel reduction fire fuels offset by increase in large fuels and many snags. Potential impact to eagle nests. Conversion of wetland shrubs to meadow. Rehabilitation plan required for extensive work.
Social	Formal contract with contractors to be complied with. Public concerns satisfied. Cultural resources protected.	Unified Command in ICS. Partial closure of refuge where affected. Oil wells in area. Bulldozers restricted.	Unified Command in ICS. Resource advisor from FWS in plans. Refuge personnel fully committed. Closure of refuge where affected. Cultural resources protected, oil wells in area. Bulldozers restricted.	
Other		Press release at control.	Public information function mobilized. Other agencies fully informed.	

SELECT ALTERNATIVE

Selected Alternative: A then B then C then D

Justification: (document the rationale, criteria, value change, available resources, etc., for selection for this alternative)

1. Human values to risk from modified suppression actions

2. Potential watershed damage from high intensity fires.
3. Rehabilitation will be extensive on large fires.
4. Large scale forest fire will convert to chaparral type
5. Unified Command and USFS-NPS-FWS for incident manage incident.
6. Full suppression of wildland fire is the order.
7. Direct attack, going indirect when necessary for fire fighter safety to contain fire at smallest possible size, in the quickest time.
8. Constraints are placed on bulldozers. They are permitted by request for specific assignments only.
9. Rehabilitation will be done as specified in fire management plans, before personnel or equipment are released from fire.
10. Pre-attack guidelines are in the Fire Management Plan.

Public information direction (for keeping public informed of situation) shall be developed as appropriate:

1. Refer to the Fire Management Plan for specific direction.
2. Refuge Manager designate Information Officer.
3. Cooperation with Emergency Coordination Center for complex situations.



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Interagency FBMPH\]](#) [\[Adm. Payment Teams\]](#) [\[Res. Order Form\]](#)



3.5 WILDLAND FIRE BUSINESS MANAGEMENT

3.5.1 INTRODUCTION

There are important administrative functions which pertain to all aspects of fire management. In the normal administration of fire management programs in a refuge, Region or National Office, the responsible staff must be well versed in the full range of administrative functions affecting program management, including the development of cooperative agreements and proper fiscal, property, personnel management and procurement procedures.

3.5.2 INTERAGENCY INCIDENT BUSINESS MANAGEMENT HANDBOOK

The Handbook, which was developed primarily for large fires requiring complex emergency organization, contains common procedures for fire specific administrative functions. It blends emergency expediency requirements with compliance with Federal procurement, personnel and financial procedures.

Instructions in the Interagency Incident Business Practices Handbook are intended for administrative personnel in support of fire programs, as well as fire management personnel managing wildland fires.

The Handbook is an extension of this chapter and the directives system of the Fish and Wildlife Service, and should be a regular reference for all staff involved in the administration of fire management programs.

3.5.3 ADMINISTRATIVE PAYMENT TEAMS

Purpose/Objectives. The purpose of the administrative payment team is to expedite payment of financial obligations incurred as a result of an emergency incident, and relieve the local administrative unit of additional work generated by the incident.

Authority. Section 4 of Executive Order 6166, dated June 10, 1933, authorizes the Division of Disbursement, United States Treasury Department, to delegate the exercise of its functions locally to officers or employees of other agencies, as the interests of efficiency and economy may require.

Responsibility. After receiving written delegation of authority from the agency administrator the team is responsible for payment of all financial obligations incurred during the incident.

Determining Need. When an emergency incident generates a large volume of obligations which may not be paid in a timely manner, or when the demand on local suppliers is so great that financial hardship may result, the agency administrator may request the assistance of the administrative payment team. The administrative payment team is authorized to pay for supplies, services, equipment rental, and casual employees utilized on an emergency incident only.

Organization. The Administrative Payment Team consists of the following positions. Determination

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Introduction](#)

[Interagency FBMPH](#)

[Adm. Payment Teams](#)

[Res. Order Form](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)[References](#)[Rehabilitation](#)

of the type and number of team members needed will be made based upon the individual incident.

- Administrative Payment Team Leader (Assistant Disbursing Officer).
 - Responsible for leadership and supervision of the team.
 - Serves as primary contact with the requesting agency administrator.
 - Establishes contact with the appropriate personnel in the incident management team.
 - Determines appropriate team members to respond to request for assistance.
 - Has unlimited authority from the U. S. Treasury to issue payments for all expenses related to the emergency incident.
- Contracting Officer - Level II Warrant is required for this person on the administrative payment team.
- Impress Fund Cashier - Class A Cashier with up to \$30,000 maximum fund. The cash need will be determined based upon the incident and the APT leader will issue a check to the impress fund cashier at the time payments are being processed.
- Administrative Specialist - Perform a variety of audit and review processes prior to payment.

The teams are coordinated through the zone coordination center. Close coordination with the Incident Finance Section Chief should take place once the Administrative Payment Team is in place to ensure that proper documentation of all obligations takes place.

Dispatch Procedures. The Administrative Payment Team is requested by the agency in the same manner that other fire resources are requested, i.e., through the established ordering channels. The request should clearly state: "ADMINISTRATIVE PAYMENT TEAM".

Interior agencies will be served by the NPS-led Administrative Payment Teams. The Forest Service has chosen to utilize their own ADO Teams, which provide the same support to national forests. The APT will use administrative procedures established for that team.

Close Out. Upon completion of all possible payments, the agency administrator or his/her representative will debrief the APT and receive copies of all payment documents.

3.5.4 RESOURCE ORDER FORM

The resource order form is used on interagency fires as an ordering document (requisition) and as a tracking document for all resources (personnel, equipment, aircraft, etc.) ordered for a sustained wildland fire, prescribed fire, or preparedness. The form may also be used for initial attack fires or as a substitute for a DI- 1 for purposes of tracking resources ordered from a non-Federal cooperator who may rebill for services utilized.

Current interagency agreements with the Bureau of Land Management, Bureau of Indian Affairs, U.S. Forest Service, and the National Park Service state that no cross-agency billing will be made for resources utilized for fire suppression. Under this agreement, each agency will assign an account and pay for the resources provided to another agency on fire emergencies.

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Fire Reviews\]](#) [\[Program Reviews\]](#)



3.6 REVIEWS

3.6.1 INTRODUCTION

Objectives

Reviews are conducted for one or more of the following purposes:

- To examine the progress of an on-going fire incident and to confirm effective decisions or correct deficiencies.
- To identify new or improved procedures, techniques or tactics.
- To compile consistent and complete information to improve or refine refuge, regional or national fire management programs.
- To examine anomalous fire-related incidents in order to determine cause(s), contributing factors, and where applicable, recommend corrective actions. If negligence is indicated, the circumstances will be reported and investigated in accordance with applicable regulations, policies or guidelines.
- To determine the cost effectiveness of a fire operation.

Responsibilities. All wildland fires, including prescribed burns, prescribed natural fires, and fire-related incidents, will be reviewed.

The approving signature on a DI-1202 will serve as sufficient documentation of an informal review on simple fires involving small acreages and in which no unusual events occurred.

Sufficient information on all other fires will be provided to allow the regional fire management coordinator, in consultation with the refuge, to recommend the appropriate level of review, if any. This must be done within thirty days after the fire has been declared out. The refuge manager and/or Regional Director will act upon that recommendation and schedule the review.

All prescribed fires reclassified as wildland fires will be reviewed.

All entrapments and fire shelter deployments will be reviewed.

All reviews will be conducted as constructive critiques aimed at determining the facts related to the specific fire or fire management program. They will identify commendable actions, techniques and decisions as well as areas which need improvement. **Reviews are intended to resolve operational issues, not impose punitive actions.**

Types of Reviews. There are two general types of reviews: those which concern specific fires and those which concern program management.

Fire reviews include the following:

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Introduction](#)

[Fire Reviews](#)

[Program Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)[Rehabilitation](#)

- "Hotline" review.
- Incident management team closeout and review.
- Prescribed fire / wildland fire review.
- Refuge level review.
- Regional level review.
- National level review.
- Entrapment and/or fire shelter deployment review.

Program reviews include the following:

- Operations evaluation review
- Annual Servicewide fire program review.
- FIREBASE review.

3.6.2 FIRE REVIEWS

The purpose of fire reviews is to examine all or part of the operations on an individual fire. Generally they occur because of some operational deficiency. Fire reviews should also be conducted on well run and efficient fires in order to document efficient procedures for use on future fires.

"Hotline" Review. The purpose of the hotline review is to examine the progress of an on-going fire incident, regardless of size. The review will provide a confirmation of the decisions being made daily in the Escaped Fire Situation Analysis or determine where the decision process has been faulty and corrective actions are needed.

The "hotline" review is normally conducted by the refuge's Fire Management Officer (or an official who has designated fire program management responsibilities) in conjunction with the Incident Commander on the fire.

These reviews require no special reporting. Documentation of "hotline" reviews should be included in the normal fire report narrative.

Incident Management Team (IMT) Closeout and Review. The agency administrator will conduct a close-out review with the IMT prior to their release from the fire incident. The purpose of this review is to ensure complete transition of the incident management back to the refuge and to evaluate the status of any incomplete fire business.

Sample Close-Out Review with IC Management Team ([Exhibit 3-6-1](#))

This is a sample outline for use by the agency administrator in the close out review with the incident management team. It may not include all appropriate topics.

Prescribed Fire / Wildland Fire Review. All prescribed fires that are reclassified as unplanned and unwanted wildland fires will be reviewed by the refuge manager or his or her designated representative. This review may be included as part of a Regional or National Level review if necessary. The purpose of the review is to determine why and under what circumstances a prescribed fire had to be reclassified as a wildland fire. It will identify the circumstances leading to the reclassification of the fire, what actions were taken after reclassification as a wildland fire, and possible future actions that need to be taken to avoid similar situations.

A formal report will be prepared, signed by the refuge manager, and a copy forwarded to the Regional Fire Management Coordinator and the Fire Management Branch. Costs of the review will be charged to the account assigned to the fire with the approval of the RFMC.

Refuge Level Review. The refuge level review should be convened and conducted by the Refuge

Manager or his or her designated representative. The Refuge Manager will appoint other qualified persons, including the refuge Fire Management Officer (or an official who has designated fire program management responsibilities) to be a part of the review.

The purpose of this review is to provide the Refuge Manager with information to recognize commendable actions and to take needed corrective action(s). As a minimum an oral review will be conducted. A written evaluation, prepared by the incident commander is required for all extra-period fires.

Costs associated with the review will be charged to the account assigned to the fire with the approval of the Regional Fire Management Coordinator. A copy of the complete report will be sent to the Regional Fire Management Coordinator, who will review it and, if appropriate, forward a copy to the Fire Management Branch.

Regional Level Review. The regional level review will be convened and conducted by the Regional Fire Management Coordinator or his/her designated representative. A regional level review will generally be conducted for any fire that:

- Crosses a refuge's boundary into another jurisdiction without the approval of an interagency agreement.
- Results in local adverse media attention.
- Involves a fatality, serious injury, or significant property damage.
- Results in controversy involving another agency.

The regional level review normally will be conducted at the refuge where the fire occurred. It will be attended by the Refuge Manager of the refuge. The refuge's Fire Management Officer (or the official who has designated fire program management responsibilities), the Incident Commander(s) or Prescribed Fire Burn Boss(es) for the fire, and other individuals agreed upon by the Regional Director and Refuge Manager.

If possible, the review team should visit the actual fire site as part of the review. A copy of the review report will be sent to the Fire Management Branch. Costs associated with the review will be charged to the account assigned to the fire.

National Level Review. The national level review will be convened and conducted by the Service Fire Management Coordinator, or his or her designated representative. A national level review will generally be conducted for any fire that involves Servicewide or national issues, including:

- Significant national adverse media or political interest.
- Multi-regional resource response.
- A substantial loss of national fire asset equipment or property.
- Fatalities or multiple serious injuries to fire management personnel.
- Any other fire that the Director wants reviewed.

The national level review normally will be conducted at the refuge where the fire occurred. It will be attended by the Refuge Manager of the refuge, the refuge's Fire Management Officer (or an official who has designated fire program management responsibilities), the Regional Fire Management Coordinator, the Incident Commander(s) for the fire, and other individuals agreed upon by the Service Fire Management Coordinator and the Regional Director.

If possible, the review team should visit the actual site of the fire as part of the review. All costs associated with the review will be charged to the account assigned to the fire.

Fire Review Procedure

Gather the following initial information:

- Region and Refuge involved.
- Name of the fire.
- Wildland Fire Number and/or Prescribed Fire Number
- Names and positions of the key people involved.
- Short scenario on what occurred.
- Other agencies involved and the names and phone numbers of the people involved and specific issues or concerns.
- Is the Regional Director, RFMO, and Refuge Manager aware of the request and the purpose of this review.
- What level of management involvement is requested by the Refuge and/or Regional Office (normally commensurate with the anticipated issues).

Determine size and qualification needed by the review team:

- Consider the following list; no specific number is required.
 - Team Leader.
 - Regional Office Representative.
 - Regional Safety Officer.
 - Aviation Expertise.
 - Prescribed Fire Expertise.
 - Training Expertise.
 - Management Expertise.
 - Other agency participation.

Gather the following information from office databases:

- Training and experience records on each key person.
- Weather station data from key stations for the day(s) of the incident.

Begin review:

- Meet with Refuge Manager to obtain his/her input, including concerns and agreement on the objective and process for the evaluation. Agree on a time frame for completion of the review and final report.
- Schedule a site visit, if conditions permit. The site visit should provide a general overview of the project area and more detailed look at critical areas.
- Develop interview schedule with the key personnel. This might include the: Incident Commander, Prescribed Fire Burn Boss, FMO, FCO, Operations Chief, Ignition Specialist, Holding Specialist, Prescribed Fire Specialists, Fire Behavior Specialist, Engine Foremen, Dispatcher(s), Air Operations Personnel, Pilot.

Gather Review Team information from the Refuge:

- Incident Action Plan
- Prescribed Fire Plan (Include the burn and/or air quality permit and/or other environmental clearances)
- Maps
- A chronology of events including the fire report and unit logs or individual statements
- If serious situation exists (potential for tort claims, interagency problem, injuries, or political issue) the Refuge should have all involved people write a narrative. Fire investigation report.
- Weather Forecasts including general forecasts and spot forecasts.
- Weather station and NFDRS data for the day of the was reclassified a wildland fire for the nearest weather station.
- A statement of the local and geographic area Preparedness Level.
- Photos.
- Any appraisal of damages.

- Documents pertaining to the qualifications and experience of the command, operations, logistics, air operations, planning, finance/administration, and/or dispatch overhead. This includes red cards, training and experience records, and task books.

Review documents:

- Review the document package to become familiar with the project and events.

Interview personnel:

- Name, position, and role in the fire.
- General qualifications, experience, and training.
- Specific statements of events, issues, and problems.
- Ask for individual recommendations on how to prevent a reoccurrence and general program improvements.

Consolidate of materials and identification of findings and recommendation:

- Specific finding to the event: causal factor, contributing factors, recommendations.
- Address at least the following issues:
 - General findings related to the Refuge wildland/prescribed fire program.
 - Operations Action Plan / Prescribed Fire Plan content and execution.
 - Existing weather and fuel conditions.
 - Qualifications and training of the key personnel.
 - Recommendations (Summary).

Closeout:

- Prior to closeout agree with management as to who should be in the closeout meeting.
- Identify how you will present the information.
- Restate purpose of the review.
- Identify this will be a draft report, and agree on a date for the final report
- Address each finding and recommendation.
- Address questions and concerns as they come up.
- Identify management concern that reflect needed changes in the document.
- Agree on who will make the final changes to the report.

Final procedure for signing and forwarding on the review document.

- Each team member signs the final document.
- Cover letter prepared.

Outline for Final Reports of Fire Reviews

This format is provided to develop consistency in the Servicewide fire review reporting system. This format will assure more efficient review of reports at the refuge, regional and national levels.

Fire reviews will follow the general outline listed below. The list of subjects is included for consideration, but only those subjects that the review team identifies as commendable actions, policy issues or correctable deficiencies need be included in the written report.

- Introduction - This section will include the names, titles, agency/home units, fire qualifications and business phone numbers of the review team members. Information regarding the date and place of the review will also be included.

- Summary Narrative - This section should contain the basic who, what, when, where, how and why, and should serve the purpose of an executive summary. Unusual major events should be mentioned but not detailed.
- Preparedness Evaluation
 - Pre-fire weather conditions
 - Fuel conditions
 - Topography
 - Special constraints
 - Planning status:
 - Fire Management
 - Pre-attack plan
 - Agreements
 - Prevention
 - Step-up plan
 - Management Evaluation
 - Initial attack evaluation
 - Dispatch
 - Description of management effort
 - Personnel qualifications
 - If unsuccessful, why?
 - Extended attack - Type II or Type I incident
 - WFSA: completed by whom, review clause?
 - [Wildland fire complexity analysis](#)
 - Delegation of authority/agency administrator briefing
 - Personnel qualifications
 - Refuge preparations for extended attack and overhead transition
 - Safety
 - Operations
 - Planning
 - Logistics
 - Finance and procurement
 - Human resources management
 - Public information
 - Interagency coordination
- Fire Suppression Impacts
- Rehabilitation
- Mobilization/Demobilization
- Appendices

Sample Questions for Fire Reviews

- Preparedness Evaluation (Pre-fire Conditions)
 - What were the weather conditions?
 - What were the weather indices at the time of ignition?
 - Describe the recent precipitation pattern and how many days since last measurable precipitation.
 - Describe any significant weather factors such as frontal systems, downbursts, thunderstorms, etc
 - How did existing weather conditions compare to the predicted "normal fire year" conditions
 - Drought index
 - What were the fuel conditions?
 - What were the fuel conditions at the point of origin (include fuel model, major species present, age class, live and dead fuel moisture, live/dead ratio, etc.)?
 - Were fuel conditions significantly different at other points within the final perimeter? If yes, what was different
 - How did fuel conditions compare to conditions expected during a "normal fire year"?

- What were the topographic conditions?
 - What were the topographic conditions at the point of origin, including slope, aspect, elevation, and position of fire on slope?
 - Were these conditions generally constant throughout the fire? If not, how were they different?
- Were there any special constraints?
 - What was the land ownership pattern for the lands burned, and those lands immediately adjacent to the burn?
 - Were there structures or other improvements that hampered suppression? If so, describe them.
 - Describe any problems with access during suppression efforts.
 - Wilderness areas
 - Threatened or endangered species
- Planning status
 - Was the Fire Management Plan current and appropriate?
 - Was pre-suppression planning current and adequate?
 - Were agreements and contracts in place?
 - Was step-up plan in place and current?
 - Were pre-suppression staffing and specific actions appropriate on the day of ignition, and consistent with the step-up plan?
- Prevention
 - Was the fire preventable? If so, what could have been done to prevent it?
 - Is prevention adequately covered in the Fire Management Plan? If not, describe efficiencies.
 - Was the investigation action prompt, appropriate and thorough?
 - If the fire was caused by human activity, describe law enforcement action taken.
- Suppression
 - Initial Attack
 - Dispatch
 - Was the duty dispatcher qualified?
 - Did a failure in the initial attack dispatch contribute to an escape? If so, how?
 - Were the initial attack dispatch procedures followed as outlined in the Fire Management Plan? If not, describe differences.
 - Description of suppression effort
 - Were the initial fire conditions accurately portrayed?
 - Was the initial attack response appropriate for known conditions, in terms of both numbers and strategy?
 - Were the proper types of equipment sent?
 - What was the initial attack strategy?
 - Was resource status accurate? If not, what needs to be corrected?
 - Did initial attack equipment work properly?
 - Were communications adequate?
 - Was equipment usable and properly maintained?
 - Were initial attack forces dispatched from the nearest available source?
 - Were all initial attack forces qualified?
 - If initial attack was unsuccessful, describe specifically why.
 - Were conditions beyond control?
 - Were insufficient resources dispatched?
 - Did forces take too long to arrive?
 - Was suppression action inappropriate?
 - Was fire potential underestimated during the size up?
 - What could have been done to give initial attack a better chance of success?

- Extended Attack/Type II or Type I Incident
 - Wildland Fire Situation Analysis (WFSA)
 - Was a comprehensive Escaped Fire Situation Analysis completed? If not, why?
 - Who prepared the WFSA?
 - Did the agency administrator (refuge manager) approve the WFSA?
 - Did the WFSA reflect the Fire Management Plan?
 - Was a wildland fire complexity analysis done?
 - Personnel qualifications
 - Was a qualified Incident Commander (IC) assigned? If not, why?
 - Refuge preparation for an extended attack
 - Did the refuge anticipate the needs of the IC and line up the necessary overhead, fire fighters, equipment, and support personnel?
 - Was an incident action plan prepared?
 - Were there adequate records of the refuge actions to date?
 - Was an appropriate overhead team requested? If not, how can we improve in the future?
 - Was it ordered soon enough?
 - Did it arrive at the requested location and on time?
 - Was the team properly equipped and supplied when it arrived?
 - Was a delegation of authority prepared prior to the IC/team arrival? If not, what was the reason?
 - Did the refuge manager conduct a briefing for the IC, including discussion of the delegation of authority?
 - Was the takeover transition by the team smooth?
 - Was the WFSA used in the briefing?
 - Were the necessary staff specialists and command staff present at the briefing?
 - Was Human Rights covered in the briefing? If not, what will be done to ensure the subject is covered in the future?
 - Safety
 - What were the safety problems on the fire?
 - Were all safety concerns resolved?
 - What was done to resolve them?
 - Was the safety officer position filled and properly used? If not, how is this to be addressed in the future?
 - How did the team incorporate safety in planning strategy, briefings, tactics, and supporting logistics?
 - What was the incident commander's attitude toward safety?
 - How did the IC communicate safety considerations to incident personnel?
 - Was safety an obvious priority?
 - What preventive actions were instituted?
 - Was a medical unit established? If not, why?
 - Was it adequate to the incident's needs?
 - Were emergency medical plans appropriate to the incident and did they work?
 - Did the IC assure that each accident was thoroughly investigated by qualified personnel?
 - Were the necessary forms and documentation completed?
 - Describe monitoring of crew condition to identify tired crews and provide adequate rest.
 - Were the 24 hour rest/work cycles considered and implemented for this incident?
 - Did employees routinely work in excess of the standard 12 hour shift after the first burning period?
 - Did the safety officer monitor work schedules?
 - What can be done to improve safety on future incidents?

- Suppression operations
 - Were incident action plan objectives and targets realistic and achievable?
 - Were there unapproved deviations from the incident action plan?
 - Was aircraft use prudent and safe?
 - Were line production targets achieved?
 - Were operation period changes completed at estimated times?
 - Were strategies and tactics employed sound and consistent with accepted fire suppression policies and procedures?
 - Were probabilities of success calculated and subsequently updated as the incident progressed?
 - Were the control objectives achieved? If not, what would have helped achieve objectives?
 - Were safety objectives attained? If not, why?
 - Was the incident management team kept intact throughout the incident? If not, why?
 - Did line supervisors stay with their assigned resources during the shift? If not, why?
 - Describe how the Agency Administrator was involved.
 - Was the Agency Administrator readily available for consultation?
 - Did the Agency Administrator attend overhead meetings and any interagency meetings?
 - Did the Agency Administrator keep the Regional Director informed of the incident's progress?
 - Did the Agency Administrator participate in all major decisions?
 - Did the Agency Administrator visit camps, airports, and other incident facilities?
 - Did the Agency Administrator tie up communication lines with non-fire business?
 - Was the Agency Administrator interested and involved in all personnel issues?
- Aviation operations
 - Was air attack effective? If not, how could it have been improved?
 - Were aircraft used according to their best capability?
 - Did air attack meet incident objectives?
 - Was it cost effective?
 - Were drops accurate?
 - Was an airspace closure considered? If used, were there any problems?
 - Was fugitive retardant considered? If not, is it possible to use in the future?
 - Was aviation support available commensurate with incident need? If not, what would have improved support?
 - Was safety paramount?
 - Were aircraft maintained in an air worthy state throughout the incident?

- Planning
 - Was the planning organization adequately staffed? If not, what was needed?
 - Was the WFSA properly used?
 - Did the Agency Administrator recertify the WFSA at least daily?
 - Was the WFSA updated as conditions changed?
 - Did intelligence gathering function smoothly and provide incident management with the information needed in a timely fashion?
 - What methods were used to collect intelligence?
 - Was available intelligence sufficient?
 - Were calculations and assumptions of probable fire behavior and location calculated for successive intervals?
 - How accurate were the projections?
 - Were resource needs calculated based upon these projections?
 - Were incident action plans prepared for every operational period? If not, why?
 - Were the suppression objectives clearly stated?
 - Was there a clear description of the work to be accomplished?
 - Were expected production rates defined?
 - Was there a discussion of weather and fuels?
 - Was there a current map of the fire?
 - Was there a communications plan?
 - Was there information concerning pickup and drop off points and transportation times?
 - Were all resources identified and correctly listed?
 - Was there a safety message?
 - Did line overhead understand all elements of the plan?
 - Were plan briefings held and were they adequate?
 - How were local overhead forces incorporated in the team structure?
 - Was the ICS system used properly?
 - Was span of control within acceptable limits?
 - Were divisions and branches appropriate to the incident's complexity?
 - Were single increments and strike teams combined into groups or task forces when possible to reduce the span of control?
 - Were contingency plans considered in the planning process? If not, how would they have helped in the final analysis?
- Logistics
 - Was the communications plan adequate?
 - Were there adequate frequencies available?
 - Was there frequency interference from other incidents or non-incident users?
 - Was there adequate communications hardware and was it available in a timely fashion?
 - Was the food service adequate?
 - Was the availability, quality, and quantity acceptable to fire fighters?
 - Were sanitation standards met?
 - Was a national caterer used?
 - Was the transportation plan responsive to incident needs?
 - Was there sufficient transportation to get crews to/from line assignments in a timely fashion?
 - Were access roads adequately maintained?
 - Was dust abatement adequate?
 - Were access routes marked and was traffic flow adequately controlled?

- Were duty hours for drivers within the standards established by DOT?
- Were all drivers qualified to operate assigned vehicles?
- Was the logistics organization able to meet shift change deadlines? If not, why?
- Was incident base security adequate?
- Were there adequate controls on the issuance of supplies and equipment?
- Were incoming/outgoing supplies manifested and checked off?
- Were personal effects of fire fighters protected?
- Were there any criminal incidents?
- To what extent were commissioned law enforcement personnel involved in the overall security program?
- Was the incident base layout and operation acceptable?
- Were sanitation standards met?
- Was the incident base size manageable?
- Were camps efficiently run?
- Were inmate crews separated from the rest of incident base population?
- Finance and procurement
 - Were established procurement channels and procedures followed?
 - Did all orders go through a single point (supply unit)?
 - Was a buying unit used? If not, would it have helped?
 - Were any supplies or services ordered outside the system? If so, why was the system not the better method?
 - Were nearest available sources used?
 - Was the most reasonable mode of transportation used?
 - Were equipment rental agreements properly completed prior to equipment use?
 - Were equipment rental records kept current?
 - Were food, lodging, and other purchases reasonable in terms of quantities and cost?
 - Were reasonable orders placed?
 - Were lead times adequate?
 - Were item amounts reasonable?
 - Were requested items consistent with incident complexity and needs?
 - Were receiving procedures in place and always used?
 - Were specific individuals responsible for receiving & receipting all incoming supplies?
 - Was property identified and marked upon receipt?
 - Were proper property issue, transfer, and return procedures in place and used?
 - Was all property accounted for during the demobilization phase?
 - Was timekeeping and associated record-keeping accurate?
 - Were crew time reports used and signed by the appropriate overhead?
 - Was posted time current for both personnel and equipment?
 - Were all compensation claims investigated in a timely fashion?
 - Were complete records established for all claims?
 - Were all claims investigated by trained and qualified persons?
 - Were payments completed in compliance with the prompt payment act?
 - Was an Administrative Payment Team (APT) used? If not, would one have helped?
 - Did the APT arrive on time?
 - Were there any coordination problems with the APT?

- Did the finance section chief participate in the preparation of the incident status report? If not, how would that participation improve the report
- Was monitoring of cost effectiveness on-going and adequate for the command staff's needs? If not, what could have been improved
- Were standard commissary procedures followed?
- Were procedures adequate to track oil and gasoline issues? If not, what would have been better
- Were procedures in place to monitor exempt FLSA personnel who might approach maximum pay limitations? If not, why?
- Human Resources Management
 - Were all personnel qualified and carded for their assignments? If not, what assurance they were qualified?
 - Were there difficulties in obtaining qualified personnel?
 - Were opportunities for training assignments identified and taken advantage of?
 - Were identified shortage category positions given priority for training?
 - Was a training specialist assigned to the incident?
 - Were trainees evaluated in writing?
 - Was the performance of all individuals evaluated continuously? If not, why?
 - Were written evaluations completed and discussed with all overhead prior to their release?
 - Were evaluations objective, factual, and honest?
 - Was immediate action taken to correct any noted deficiencies?
 - Were all crews provided a written evaluation of their performance prior to release? If not, why?
 - Were all human rights complaints promptly documented and investigated? If not, why?
 - What section was human rights placed in?
 - Were there any complaints?
 - Who conducted the investigations?
 - How were situations resolved?
- Fire Information
 - Did the fire team use the information officer position effectively? If not, how could it have been improved?
 - Was accurate information provided to the media in a timely fashion?
 - Was the IO function conducted with minimum impact upon the fire management and the refuge as a whole?
 - Was the IO available to the media?
 - Was the refuge interpretive program effective in relaying fire information to visitors? If not, what could improve it?
 - Did the interpretive program address fire management issues prior to the fire?
 - What interpretive techniques were in use during the fire?
 - Was the interpretive effort proactive or reactive?

- Interagency Coordination
 - What was the extent of interagency involvement in the incident?
 - Was pre-planning adequate? If not, how could it have been improved?
 - Was there any cost sharing involved? If not, how could sharing have been advantageous?
 - Were there any problems in assessing shares?
 - Was a MAC group activated? If not, was it needed?
 - Was the group effective in setting priorities and allocating resources?
 - Did the group become involved in the management of the incident?
 - Did all agencies feel they were effectively represented on the MAC group?
 - Were the MAC representatives qualified?
 - Was area command established? If not, was it needed?
 - Was area command effective in coordinating the management of the various incidents?
 - Were affected agencies allowed input to the AC decision process?
 - Were all members of area command qualified?
 - Were there any conflicts between area command and MAC?
- Suppression impacts/fire effects/suppression rehabilitation
 - Was a resource advisor designated and available for consultation regarding all aspects of environmental impacts resulting from suppression action? If not, would resource damage have been reduced?
 - Were there irreversible effects upon refuge cultural or natural resources?
 - Were environmental considerations discussed at all strategy meetings?
 - Were fire lines, access routes, camps, helispots, and other facilities located and constructed with minimal environmental impact in mind?
 - Was the use of heavy equipment restricted?
 - Was post fire rehabilitation carried out and was it effective?
- Mobilization/Demobilization
 - Were mobilization and demobilization orderly and adequate to meet the IC's objectives?
 - Was the closest forces concept applied to the mobilization?
 - Were interagency resources realistically used?
 - Were requested time frames for arriving resources realistic?
 - Was the most reasonable mode of transportation used?
 - Did all resource orders go through the established dispatch channels?
 - Were priorities established and followed?
 - At what point was demobilization addressed by the IC?
 - Was the demobilization plan in writing?
 - Was timing of transportation reasonable and was it cost effective?
 - Were refuge resources the last to be demobilized?
- APPENDICES - Include all documents relevant or required for the particular fire to provide a clear and detailed picture of the incident, including:
 - WFSAs with all updates.
 - IAPs showing incident strategy and any changes in tactics.
 - Map of the fire, by burning periods.
 - Incident Status Summaries (ICS-209).
 - Precipitation record and NFDRS ten day fire danger records with graph of fire danger indices.
 - Weather information including previous day's forecast, subsequent daily forecasts throughout the incident, and all fire behavior predictions generated as a result of these forecasts.
 - Completed Individual Fire Report, DI-1202.
 - Display maps showing fuel models, transportation system, communication points, and any other information deemed necessary to understanding of the incident.
 - Personnel and equipment charts showing buildups by burning periods.
 - Detailed financial summary of the incident.

Distribution of Reviews

Regional Fire Management Coordinators will be responsible for determining specific information from fire reviews that might be of interest or concern to other refuge areas. Such information might be specific problems that occurred or recommendations that might be applicable elsewhere. RFMCs will forward such information within 30 days to the Fire Management Branch for appropriate distribution.

Entrapment and Fire Shelter Deployment Review. Fire shelter deployment is defined as the use of a fire shelter for its intended purpose in any situation other than training. Use of the terms "precautionary deployment", "practice deployment" and "entrapment deployment" are not acceptable or recognized.

Entrapments and fire shelter deployments will be reviewed in order to gather complete and accurate information to determine the reasons for the deployment. Corrective recommendations will be developed to minimize future situations which might lead to other shelter deployments.

All entrapments and fire shelter deployments will be reviewed by the refuge manager and reported to the Regional Fire Management Coordinator, who will be responsible for developing the review team in cooperation with the Fire Management Branch. The team leader will contact the agency administrator for reporting information.

All entrapments and fire shelter deployments will be investigated as soon as possible after the deployment incident.

Specific Directions for Conducting an Entrapment or Shelter Deployment

Incident Commander Responsibilities. Upon notification of an entrapment or fire shelter deployment the Incident Commander will:

- Ensure that the involved personnel and supervisors are removed from the fire line and receive appropriate medical attention, if necessary.
- Ensure the entrapment or deployment scene is secured and all pertinent evidentiary items are secured or collected. All equipment should remain in place, if possible, or secured for the review team.
- Immediately notify the agency administrator and provide details on the incident status summary (ICS-209).
- Conduct a preliminary investigation of the entrapment or deployment to determine, insofar as is possible, the cause of the deployment. The investigation and a preliminary issuance of findings will be completed within 24 hours of the deployment.
- Ensure that the involved supervisors are relieved from fire line duty for the duration of the fire or until a review board has completed its review and determined that inappropriate supervisory actions did not contribute to the deployment.
- Ensure that involved personnel and supervisors are readily available for interviews by the review team. "Available" means present at the incident base or nearby R&R center.
- As soon as possible, provide the results of the Incident Commander's preliminary investigation to the Agency Administrator. Ensure preparation of a roster of individuals involved in the deployment. The roster must contain their names, genders, ages, addresses, titles, and social security numbers.

Agency Administrator Responsibilities. Upon notification of an entrapment or fire shelter deployment, the agency administrator will assure the following activities take place within 24 hours of notification:

- Convene a review board to review the entrapment or shelter deployment. The review board will consist of at least the following:
 - Incident commander or operations section chief (Type I).
 - Fire behavior analyst qualified in the specific fuel type.
 - Safety officer.
 - Hot shot crew superintendent or strike team leader.
 - Designee of involved supervisors, if requested (one each).
- Instruct the review team to arrive on scene within 24 hours.
- Arrange for a critical incident stress debriefing team for the personnel involved in the entrapment or deployment.
- Notify the home unit agency administrator of all individuals involved in the deployment.
- Notify the local region and local refuge personnel offices.
- Arrange to notify next of kin of all individuals involved in the entrapment or deployment.

Board of Review Responsibilities:

- A board of review will, within 24 hours of beginning its investigation, prepare an entrapment or deployment incident briefing and submit it to the agency administrator and incident commander.
- The board's final report and recommendations will be submitted to the agency administrator within 30 days of the board's convening at the site.
- The agency administrator will forward a complete copy of the report to the Regional Fire Management Coordinator for review and comment.
- The Regional Fire Management Coordinator will forward copies to the Fire Management Branch for review and any other appropriate distribution.

Format for Entrapment/Fire Shelter Deployment Written Review

- Executive Summary
- Review Team Members - Listing of investigator/board of review members, giving names, agencies, titles, red card qualifications, home units, and business phone numbers.
- Chronology - A chronology of events leading to entrapment/deployment.
- Findings
- Recommendations
- Appendices
 - Maps
 - Statements
 - Personnel rosters
 - Incident action plans and unit logs (ICS-214)
 - Detailed narrative of fire weather and behavior
 - Photographs
 - Other pertinent documentation

3.6.3 PROGRAM REVIEWS

The National Wildlife Refuge System, Fire Management Branch, has national program oversight and intra and interagency coordination responsibility for all aspects of the fire management program. This oversight includes ensuring that there is continuity within the program, compliance with Service and Departmental policy and uniformity and compliance in the use of program funds. Program areas to be reviewed include program administration, preparedness, emergency fire operations (including rehabilitation), and resource fire management.

Program reviews ([Exhibit 3-6-2](#)) will be conducted within the spirit of Total Quality Management (TQM). The review will focus on the positive aspects within the program, the new and innovative ideas that may have Regional, national or interagency application, and on the services being provided to our "customer." Most important in the review will be the safety policies and practices within the program and the people involved in the program.

Objectives

The review is designed to obtain, analyze, and evaluate information concerning the administrative, managerial, operational, and monitoring procedures of the program. In general the objectives of the program review are to:

- Validate adequacy of management policy, structure, and guidance to support field organizations in performing their duties.
- Confirm compliance with laws, regulations, and Departmental guidance.
- Identify opportunities to share ideas, methods, and techniques developed by other offices and individuals.

Types of Program Reviews

- Operations Evaluations: Operations evaluations of refuges and regions will include the review of fire management programs to assure compliance with established Fish and Wildlife Service standards.
- Fire Program Review: The Chief of the Fire Management Branch will convene an ad hoc team to review Servicewide fire activity during any year in which significant, unusual or controversial fire activity occurs. This review team will analyze the reports from national level reviews and appropriate region level reviews to determine what, if any, policy or operational changes should be initiated. The review team will develop findings and recommendations and establish priorities for action.
- FIREBASE Review: All refuges receiving annual, recurring FIREBASE funding in addition to normal unit strength funding will be subject to a periodic fire-program review. Refuges will be reviewed on a two, three or four-year schedule, depending on the dollar value of a refuge's FIREBASE allocation. The Fire Management Branch will determine this value each year and will notify regional offices accordingly. From this information, regional offices will compile a list of refuges to be reviewed each fiscal year. These reviews will be conducted by either the regional offices, the Fire Management Branch or both. Refuges should be reviewed more frequently than the standard schedule if known problems exist or if program deficiencies have been identified in previous program reviews. These reviews will include both an audit of expenditures and an analysis of how well FIREBASE addresses program management needs. When appropriate, the FIREBASE review may be conducted in concert with an operation evaluation of the refuge.

Process

A team approach will be used during the review process. Membership on this team may vary depending upon the objectives that are to be met. General composition for Regional reviews will involve the following positions or expertise:

- Service Fire Management Coordinator or designee (Team Leader)
- Regional Fire Management Coordinator
- Peer Regional Fire Management Coordinator or Fire Management officer from another Region
- Program Specialist/Analyst from Finance, Personnel or
- Fire Management Branch staff specialists as needed

The basic review team should not exceed five or six people. There may be fewer members required depending on the complexity. Some refuges will also be visited. Travel costs will be shared between the Regional and national offices.

The review will begin with a meeting of the Review Team, Regional Director and the Assistant Regional Director, Refuges and Wildlife. The purpose of this meeting will be to clarify the review objectives, and to ensure understanding of the process and the expected product. A close-out with the same group will occur at the conclusion of the review where a rough draft of major review

findings and recommendations will be presented.

The review will look at what guides the program now, what is in place, how that is working and focus on policy, procedures and practices. If a policy or procedure is not being followed, the reason behind this must be determined and suggestions for change identified.

The Region and any refuges visited will need to make certain information available to the Review Team prior to the review. This material will be standard types of reports that would normally be available at the Regional or refuge level. Some information will be requested ahead of the Review Team's arrival in order to maximize field time and to reduce the amount of time required to address some of the program review questions.

The types of information may include but are not limited to:

- Fire management plans and related support documents.
- Fire FTE profile for the Region including location, job title, and funding source.
- FFS reports that show expenditures of fire funds including emergency funds for current year.
- Budget allocation documents showing funding spread at the Regional Office and at the refuge.
- End-of-year summary reports showing actual expenditures against planned expenditures.
- Copies of most recent internal reviews conducted by the Region
- Annual narratives.
- Cooperative agreements and/or contracts.
- Latest reviews or evaluations that have relevance to the fire program.

Personal interviews will also be conducted with individuals outside of the fire program at the Regional and refuge levels. Interviews will include cooperators, Finance, Procurement, Personnel staffs, etc.

Findings and Recommendations

A close-out will be conducted with any refuge visited as a courtesy to the refuge staff. Any major finding will usually be made known to the refuge manager unless the Regional Director establishes different guidance.

The close-out with the Regional staff will provide at least a rough draft of the final report. The intent again is to improve the program so this will be approached in a positive manner. The final report will be issued from the Chief, National Wildlife Refuge System. Due dates for any follow-up actions and responsibility will be negotiated to ensure reasonable dates are established that will lead to success in improving the program.

Follow-up

Follow-up responsibilities should be assigned to the Regional Director or designee and to the Chief, National Wildlife Refuge System when the review involves the Washington Office. The action would serve to bring the review and its recommendations to closure by validating that all actions had been completed. This final step adds validity to the process and illustrates top management support to enhancing the program through the review process.

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Exhibit 3-6-1: SAMPLE CLOSE-OUT REVIEW WITH IC MANAGEMENT TEAM

This is a sample outline for use by the agency administrator in the close out review with the incident management team. It may not include all appropriate topics.

INTRODUCTIONS (Conducted by agency administrator). Assure that all of the "new faces" at this meeting are known to entire group.

REVIEW CRITIQUE CONSIDERATIONS (Conducted by agency administrator.)

[Back](#)

1. Emphasize that the evaluation will be two-way.
2. Be candid and objective, not offensive and accusatory.
3. Deal with real management issues.
4. Attack the situation and incident, not the people involved.
5. Remember that a self-critique is usually more acceptable to all people.
6. Identify strengths as well as weaknesses.
7. Determine how well the team reacted to correct problems.
8. During analysis of problems, do not limit the review to first-level causes.
9. Remember that the team works for you and your agency.
10. Analyze both costs and benefits and be sure you are not analyzing "apples and oranges".
11. Include an evaluation of the incident impacts on the resource.
12. Consider both individual and team performances.
13. Determine appropriateness of safety considerations and risk taking.

SEQUENTIAL REVIEW OF ISSUES, CONCERNS AND OPPORTUNITIES

(Conducted by Incident Commander.)

1. Mobilization.
2. Briefing:
 1. Agency administrator direction/delegation
 2. WFSA
 3. Resource advisor
3. Interagency agreements and direction.
4. Pre-arrival orders.
5. Camp and facility issues.
6. Community relations.
7. Transition/cooperation with other incident management teams.
8. Expanded dispatch operations.
9. Agency administrator's representative (agency advisor).
10. Operations.
11. Personal welfare and safety
12. Cost considerations
13. Land ethics and land management objectives.
14. Information Officer items.
15. Contracting, finance and property considerations.
16. Demobilization.

CLOSING COMMENTS BY INCIDENT COMMANDER/TEAM

CLOSING COMMENTS BY AGENCY ADMINISTRATOR



Exhibit 3-6-2: FIRE MANAGEMENT PROGRAM REVIEW

Program Administration

[Back](#)

- Budget/Funding

- Is the Region/Refuge present organization (workforce, equipment, aircraft, facilities) and funding at the approved level?
- In what budget subactivity submission is your fire construction need(s) identified? Are these needs tied to the Fire Management Plan (FMP) and are they prioritized and identified in the out-year budget proposals?
- Are 92XX funds being utilized according to existing guidance?
- What activities are fire-funded personnel being used for other than program management, preparedness and firefighting? Is this outside work planned for and budgeted in a work plan? How is this work funded?
- Is the fire program being assessed an administrative change or other overhead expenses?
- How are your prescribed fires funded?

- Fire Business Management

- Is there a current copy of the Interagency fire Business Management Handbook readily available?
- Are the policies and guidelines being followed for all components (personnel, procurement, property management, cooperative agreements, accident investigation reporting, and claims against the United States) in the Handbook?

- Financial Accountability

- Are Financial Management reports being reviewed to monitor policy concurrence in the use of 9251, 9261, 9262, and 9263 funds?
- Are fire costs lower in areas where plans call for confine or contain strategy rather than a control strategy?
- Is there follow-up after an Wildland Fire Situation Analysis has been developed to see if the selected alternative has been followed and if the cost-estimate was accurate?
- Is the refuge aware of the process to be used to get reimbursed when the Service fights fires on State and private land?

- Trespass

- When and how is a Fire Trespass billing issued?
- Who makes the determination that a trespass has occurred and how is the value determined?
- What percentage of the human-caused fires in the Region/Refuge have resulted in trespass actions?
- How are fire trespass cases handled?

Program Management

- Interagency Cooperation

- Are all Region and Refuge reciprocal and nonreciprocal agreements for fire suppression assistance current and readily available?
- What process exists to ensure dispatcher and appropriate administrative staff understand these agreements?
- Does the Regional Office have a copy of all refuge agreements?
- Is the content and format of the agreements conforming to present Service standards?
- Are there entities where agreements are needed or present ones that should be revised?
- Based upon existing agreements, do personnel understand and follow procedures to accomplish reimbursable billings?

- Organizational Structure and Staffing

- Does the Region/Refuge's organizational structure and staffing conform with the FMP?
- Does the Fire Management Officer's position or other program management positions have collateral duties? What is the percentage split between fire and the other duties? How is the position funded?
- Do any of the preparedness positions have collateral duties assigned? What is the percentage split between fire and the other duties? How is the position funded?
- What is the total FTE by subactivity allocated to the Region/Refuge in the WAG? Are all FTE's included in the program management or preparedness discussions from questions 2 and 37 If not, explain.

- Planning and Policy

- Are refuge personnel familiar with the Service's fire program policy and the concept that only two kinds of fires are recognized?
- What type of suppression strategy is used in areas where the values at risk are low? What justification or rationale was used to reach this decision?
- Are refuge personnel familiar with the Service's policy on structural fires? How does the Refuge respond to private land and property fires? Has the policy been explained to local cooperators?
- What station planning documents are in place? Is there a Refuge Comprehensive Plan? Are areas identified where prescribed fire may be used on a rotational basis and are objectives/reasons presented why these areas exist?
- Do refuge objectives identify fire management and fire-related land use objectives?
- Do refuge objectives identify areas where intensive suppression (control) is necessary and are reasons given for this identification?
- Who reviews the draft Fire Management Plan (FMP) for consistency with current policy and technical adequacy regarding fire as an ecological process, a management tool, and an agency program?
- What are the source documents for FMP objectives? Are the protection objectives (standards) quantifiable? Provide examples.
- Have suppression constraints and restrictions been identified in the FMP, and are they identified by locations? Give examples. How is the guidance on constraints and restrictions translated into operational activities?
- When was the last time the FMP was updated and approved?
- Is the Wildland Fire Situation Analysis being developed on all fires that escape initial attack? Who develops this plan, who approves it, and how is it presented to the Incident Commander? Who is given the authority to execute the plan?

- Wilderness Fire Management
 - How do fire management plans that address preparedness, suppression, post-fire rehabilitation, and prescribed fire in and out of wilderness areas differ?
 - Is there a separate fire management plan or a separate plan that addresses fire management in wilderness areas? Is it available?
 - How are motorized equipment and mechanical transport approved in emergency situations in Wilderness Areas?
- Prescribed Fire
 - How are your prescribed fire objectives designed to meet resource management objectives and constraints? Provide examples. Did the 'source' documents call for the use of prescribed fire?
 - Under what condition(s) should a prescribed burn be declared a wildfire and who makes the decision?
 - How is smoke management addressed in the development of your burn plan and by whom, and how are State and local concerns addressed?
 - Does the prescribed fire plan meet national policy requirements and standards?
 - What is the process for implementing cooperative prescribed burns with State and Federal agencies, or private individuals and organizations?
 - Whose responsibility is it to plan, implement and approve a prescribed fire plan. What is the Refuge's process used to prepare for a prescribed fire?
 - What is the review process followed in the event a prescribed fire escapes and a wildland fire is declared?
 - Are all elements of the prescription understood?
 - Over the past 5 years, how many and what percent of prescribed fires have been declared wildland fires? Was a review done to determine why and what changes were done to mitigate future events?
 - Over the past 5 years, have prescribed fire targets been accomplished? If not, why? Has this affected fire management objective achievement?
- Public Affairs
 - Is there a current Region/Refuge Fire Information Plan? Is it being followed?
 - Is an adequate public affairs support system in place to ensure reactive coverage of the fire management program?
- Program Monitoring
 - Does each organizational unit (Region/Refuge) conduct an annual review of fire season operations?
 - Are principal employees in attendance at the annual reviews, is it scheduled in a timely manner, and are the major issues/concerns addressed?
 - Are interagency cooperators at the Refuge or the Geographic Coordination Center included in the annual review?
 - When was the last time a fire program review was performed at your station? By whom?
 - Are the effects of wildfires and prescribed fires evaluated by post-burn evaluations? If so, how is this done?
 - Is there a close-out with an overhead team or a critique involving refuge personnel conducted after an extended attack wildfire occurs? If so, how is this conducted?

Program Operations

- Communication
 - Is there an adequate communications plan and network (radio, phone, data, fax, etc.) for initial attack and support requirements?
 - Are the ordering procedures and availability of the]National Incident Radio Support Cache understood?
- Dispatch/Coordination Center
 - Are the National Mobilization Guide policy and procedures understood and followed?
 - Is there a Regional/Refuge Mobilization Guide to supplement national policy and procedures?
 - Is there an adequate current pre-planned dispatch system in place?
 - Is pre-attack planning done? How is this displayed?
 - Are space, communications, and staffing adequate in dispatch/coordination centers to handle anticipated workload?
- Equipment Cache
 - Has a Normal Unit Strength (NUS) been established for fire cache items? How were the stocking levels determined?
 - Is the NUS maintained and managed using standard Service accountability and warehouse systems?
- Fire Facilities
 - Are maintenance and inspection procedures for facilities in place and used?
 - Are the current facilities in number and location sufficient to meet the initial attack workload?
 - How are building maintenance funds utilized on fire facilities?
- Fire vehicles and Equipment
 - Are fire vehicles under a preventative maintenance program?
 - Are units weighed each year to ensure compliance with placard Gross Vehicle Weights (GVW)? Are these weight tickets on file?
 - Are checklists such as Engine, Inventory Checklist, Vehicle inspection Checklist, Daily inspection Form and Engine crew Readiness inspection, vehicle Daily Inspection Chart, and Daily Preventative maintenance Checks in use?
 - How is the replacement cycle determined? What funding sources are used to replace vehicles and equipment?
 - What is the heavy equipment inventory for the refuge and how much equipment is considered to be "fire equipment"?
 - What is the percent of usage of "fire equipment" on fire preparedness and suppression versus non-fire work?
- Fire Rehabilitation
 - Is there a clear understanding of the rehabilitation policy and that there are two types of rehabilitation?
 - Is damage caused by suppression personnel and equipment being mitigated prior to departure from the area?
 - Are trained/experienced Resource Advisors available in each area? Are they utilized when fires go into extended attack or project status?

- Safety

- Are Accident Reviews conducted on all major accidents?
- Are the Service safety/accident reporting procedures adhered to?
- Are reporting requirements for personnel injury (which requires hospital confinement), death or equipment accidents being adhered to?
- Are personnel protective Fire Safety Equipment standards established for all firefighting and prescribed fire situations (Ground Crews, Engine Crews, Aircraft operations etc.) and are these standards being adhered to?
- Is the Fire Safety Equipment being properly maintained and accounted for?

- Training & Qualifications

- Is the required annual refresher training conducted for seasonal and permanent firefighting personnel?
- Is basic First Aid and Defensive Driving train conducted for all new employees?
- Are all fire training courses (suppression and prescribed fire) and assignments being documented annually?
- Are all fire qualified seasonal and permanent employees being step tested as required and utilized on fire assignments?
- Are fire training activities tied to the Regional or geographic training groups?
- Is there a Regional allocation of force target that guides shared resource overhead training? If not, how training needs prioritized?

- Fire Prevention

- Has a proactive fire prevention plan been prepared based on the risks and hazards identified in the Fire Management Plan?
- Is the fire prevention plan current?
- Does the Region/Refuge work on fire prevention activities through interagency prevention cooperatives? What role does the Service take?

National Support Systems

- Are there issues/concerns with any of the support systems located at NIFC?

- Logistical Support Office
- Training Development, Assistance, Standards
- National Incident Radio Support Cache
- National Equipment / Supply Cache Systems

- Are there any issues/concerns with the policy and direction provided by the Washington Office, Fire Management Branch?


[Back](#)

Exhibit 3-3-6: WILDLAND FIRE COMPLEXITY RATING WORKSHEET NUMERIC RATING GUIDE

COMPLEXITY ELEMENT	GUIDE TO NUMERIC RATING		
	1	3	5
Safety	Safety issues are easily identifiable and mitigated	<ul style="list-style-type: none"> Number of significant issues have been identified All safety hazards have been identified on the LCES worksheet and mitigated 	<ul style="list-style-type: none"> SOF1 or SOF2 required Complex safety issues exist
Threats to Boundaries	<ul style="list-style-type: none"> Low threat to boundaries POI<50% Boundaries naturally defensible 	<ul style="list-style-type: none"> Moderate threat to boundaries 50<POI<70% Moderate risk of slopover or spot fires Boundaries need mitigation actions for support to strengthen fuel breaks, lines, etc. 	<ul style="list-style-type: none"> High threat to boundaries POI>70% High risk of slopover or spot fires Mitigation actions necessary to compensate for continuous fuels
Fuels/Fire Behavior	<ul style="list-style-type: none"> Low variability in slope & aspect Weather uniform and predictable Surface fuels (grass, needles) only Grass/shrub, or early seral forest communities Short duration fire No drought indicated 	<ul style="list-style-type: none"> Moderate variability in slope & aspect Weather variable but predictable Ladder fuels and torching Fuel types/loads variable Dense, tall shrub or mid-seral forest communities Moderate duration fire Drought index indicates normal conditions to moderate drought; expected to worsen 	<ul style="list-style-type: none"> High variability in slope & aspect Weather variable and difficult to predict Extreme fire behavior Fuel types/loads highly variable Late seral forest communities or long-return interval fire regimes Altered fire regime, hazardous fuel /stand density conditions Potentially long duration fire Drought index indicates severe drought; expected to continue

Objectives	<ul style="list-style-type: none"> ● Maintenance objectives ● Prescriptions broad ● Easily achieved objectives 	<ul style="list-style-type: none"> ● Restoration objectives ● Reduction of both live and dead fuels ● Moderate to substantial changes in two or more strata of vegetation ● Objectives judged to be moderately hard to achieve ● Objectives may require moderately intense fire behavior 	<ul style="list-style-type: none"> ● Restoration objectives in altered fuel situations ● Precise treatment of fuels and multiple ecological objectives ● Major change in the structure of 2 or more vegetative strata ● Conflicts between objectives and constraints ● Requires a high intensity fire or a combination of fire intensities that is difficult to achieve
Management Organization	<ul style="list-style-type: none"> ● Span of control held to 3 ● Single resource incident or project 	<ul style="list-style-type: none"> ● Span of control held to 4 ● Multiple resource incident or project ● Short-term commitment of specialized resources 	<ul style="list-style-type: none"> ● Span of control greater than 4 ● Multiple branch, divisions or groups ● Specialized resources needed to accomplish objectives ● Organized management team (FUMT, IMT)
Improvements to be Protected	<ul style="list-style-type: none"> ● No risk to people or property within or adjacent to fire 	<ul style="list-style-type: none"> ● Several values to be protected ● Mitigation through planning and/or preparations is adequate ● May require some commitment of specialized resources 	<ul style="list-style-type: none"> ● Numerous values and/or high values to be protected ● Severe damage likely without significant commitment of specialized resources with appropriate skill levels
Natural, Cultural, and Social Values to be Protected	<ul style="list-style-type: none"> ● No risk to natural, cultural, and/or social resources within or adjacent to fire 	<ul style="list-style-type: none"> ● Several values to be protected ● Mitigation through planning and/or preparations is adequate ● May require some commitment of specialized resources 	<ul style="list-style-type: none"> ● Numerous values and/or high values to be protected ● Severe damage likely without significant commitment of specialized resources with appropriate skill levels
Air Quality Values to be Protected	<ul style="list-style-type: none"> ● Few smoke sensitive areas near fire ● Smoke produced for less than 1 burning period ● Air quality agencies generally require only initial notification and/or permitting ● No potential for scheduling conflicts with cooperators 	<ul style="list-style-type: none"> ● Multiple smoke sensitive areas, but smoke impact mitigated in plan ● Smoke produced for 2-4 burning periods ● Daily burning bans are sometimes enacted during the burn season ● Infrequent consultation with air quality agencies is needed ● Low potential for scheduling conflicts with cooperators 	<ul style="list-style-type: none"> ● Multiple smoke sensitive areas with complex mitigation actions required ● Health or visibility complaints likely ● Smoke produced for greater than 4 burning periods ● Multi-day burning bans are often enacted during the burn season ● Smoke sensitive class 1 airsheds ● Violation of state and federal health standards possible ● Frequent consultation with air quality agencies is needed ● High potential for scheduling conflicts with cooperators

Logistics	<ul style="list-style-type: none"> • Easy access • Duration of fire support is less than 4 days 	<ul style="list-style-type: none"> • Difficult access • Duration of fire support between 4 and 10 days • Logistical position assigned • Anticipated difficulty in obtaining resources 	<ul style="list-style-type: none"> • No vehicle access • Duration of support is greater than 10 days • Multiple logistical positions assigned • Remote camps and support necessary
Political Concerns	<ul style="list-style-type: none"> • No impact on neighbors or visitors • No controversy • No media interest 	<ul style="list-style-type: none"> • Some impact on neighbors or visitors • Some controversy, but mitigated • Press release issued, but no media activity during operations 	<ul style="list-style-type: none"> • High impact on neighbors or visitors • High internal or external interest and concern • Media present during operations
Tactical Operations	<ul style="list-style-type: none"> • No ignition or simple ignition patterns • Single ignition method used • Holding requirements minimal 	<ul style="list-style-type: none"> • Multiple firing methods and/or sequences • Use of specialized ignition methods (i.e. terra-torch, Premo Mark III) • Resources required for up to one week • Holding actions to check, direct, or delay fire spread 	<ul style="list-style-type: none"> • Complex firing patterns highly dependent upon local conditions • Simultaneous use of multiple firing methods and/or sequences • Simultaneous ground and aerial ignition • Use of heli-torch • Resources required for over 1 week • Multiple mitigation actions at variable temporal and spatial points identified. Success of actions critical to accomplishment of objectives • Aerial support for mitigation actions desirable/necessary
Interagency Coordination	<ul style="list-style-type: none"> • Cooperators not involved in operations • No concerns 	<ul style="list-style-type: none"> • Simple joint-jurisdiction fires • Some competition for resources • Some concerns 	<ul style="list-style-type: none"> • Complex multi-jurisdictional fires • High competition for resources • High concerns



U.S. Fish & Wildlife Service

Fire Management Handbook



CHAPTER 4. WILDLAND FIRE TRESPASS

Wildland fire trespass refers to the occurrence of unwanted and unplanned wildland fire on Fish and Wildlife Service (Service) lands where the source of ignition is tied to some type of human activity.

The initial determination of the ignition as being human-caused usually results from an eyewitness report or with the arrival of the Initial Attack Incident Commander at the fire scene. Service policy requires any fire to be investigated to determine cause, origin, and responsibility. For all human-caused wildland fires where responsibility can be determined, trespass actions are to be taken to recover the cost of damage to the resource or improvements and to recover costs of suppression.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

To start things in motion, make a thorough investigation of the facts surrounding the fire and provide documentation in a trespass report. The report is completed by the Service employee who discovered the wildland fire trespass or is assigned to the investigation. The trespass report is submitted to the Project Leader. Management shall at this point request assistance from Law Enforcement if there is any question on civil versus criminal penalties.

If the recommendation is to pursue as a trespass action because responsibility can be determined, a case number is assigned from the Refuge Case Log and the investigative file begins. If information at this point indicates the case to be criminal in nature, Law Enforcement takes over further investigation. If information indicates the case will be a civil action, a Refuge employee with knowledge of investigative procedures may pursue the investigative process.

If the investigation is successful, then a Bill for Collection form, DI-1040 (along with other supporting documents) is issued to recover costs. The actions taken at this point are administrative in nature. If the trespasser pays in full, the trespass process ends within administrative channels. If less than full payment is made, then the next recourse is through the court system. At this point, the case will fall into either the civil or criminal process. The Finance Center will be responsible for any subsequent collection notices, and copies of these notices will be furnished to the appropriate organization.

This is a very simple, holistic picture of trespass as related to fire. Depending upon a number of actions and reactions, there are situations where managers must seek advice from appropriate Service specialists and Field or Regional Solicitors (Solicitor) through established channels. The question of civil versus criminal recourse requires outside input from technical experts. The nuances of investigation under civil versus criminal cases differ, and require expert advice.

This Chapter should not be relied upon as the final authority in pursuing wildland fire trespass cost recovery. The references cited in the Departmental Manual, Part 620, 50 CFR, Part 28.32, and the Service Manual should be reviewed by those involved in wildland fire trespass. Managers need to know or be advised on what their roles, limitations, and capabilities are in trespass cases (Service Manual 621 FW 1.5).

The costs incurred during suppression operations must be recovered in full if there is the ability to pay. There is no room for negotiation on these costs. If the ability to pay does not exist, a court decision could be handed down that might provide for payment in kind.

Rehabilitation

The manager does have the latitude to recommend alternative methods for recovery of damages to natural resources or improvements. This recommendation would be forwarded to the Solicitor through appropriate channels for a decision. If full payment is not made to the Service while in the administrative phase of trespass, then it falls to the legal system and its representatives to recover costs in whatever form is most appropriate.

It should also be remembered that an aggressive trespass program is also an excellent prevention program. An appropriate level of media attention should be given to successes of the trespass program in an effort to emphasize the positive preventative actions that can be gained.

4.1 [FIRE INVESTIGATION](#) - Revised 3/17/004.1.1 [INTRODUCTION](#)4.1.2 [CAUSE DETERMINATION - Initial Attack](#)

Things To Do En Route To The Fire

Natural-caused fires

Person-Caused Fires

4.1.3 [WILDLAND FIRE INVESTIGATOR RESPONSIBILITIES](#)

Duties and responsibilities

Training and Qualifications

Evidence

4.1.4 [WILDLAND FIRE INVESTIGATION CASE REPORTS](#)

Civil

Criminal

[Exhibit 4-1-1: WILDLAND FIRE INVESTIGATION ILLUSTRATION](#)

[Exhibit 4-1-2: SAMPLE CASE REPORT](#)

4.2 [COST DETERMINATION](#) - Revised 3/17/004.2.1 [INTRODUCTION](#)4.2.2 [RESOURCE DAMAGES](#)

Rehabilitation Costs

Suppression Related Rehabilitation Costs

4.2.3 [PHYSICAL IMPROVEMENT DAMAGE](#)4.2.4 [OFF-SITE VALUES](#)4.2.5 [SERVICE SUPPRESSION COSTS](#)

Indirect (Administrative) Costs

4.2.6 [COST DATABASE](#)4.2.7 [OTHER RELATED DIRECT COSTS](#)4.3 [CIVIL CASE PROCEDURES AND BILLING](#) - Revised 3/17/004.3.1 [FIRE TRESPASS CASE FILE](#)4.3.2 [TRESPASS REGISTER](#)4.3.3 [CASE PREPARATION](#)4.3.4 [TRESPASS NOTIFICATION](#)4.3.5 [TRESPASS BILLING](#)4.3.6 [LESS THAN FULL SETTLEMENT](#)4.3.7 [LITIGATION](#)4.3.8 [CASE FOLLOW-UP AND CLOSEOUT](#)

[Exhibit 4-3-1: BILLING COVER LETTER](#)

[Exhibit 4-3-2: BILL FOR COLLECTION](#)

[Exhibit 4-3-3: FIREFIGHTING COST REPORT](#)

4.4 [CRIMINAL CASE PROCEDURES](#) - Revised 3/17/004.4.1 [MISDEMEANORS](#)4.4.2 [FELONIES](#)4.4.3 [CHANNEL FOR PROSECUTION](#)4.5 [TRESPASS GLOSSARY OF TERMS](#) - Revised 3/17/00

4.6 [TRESPASS REFERENCES](#) - Revised 3/17/00

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Cause Determination\]](#) [\[Investigator Resp.\]](#) [\[Case Reports\]](#)



4.1 FIRE INVESTIGATION

4.1.1 INTRODUCTION

All fires must be thoroughly investigated to determine cause and if negligence and/or criminal intent were factors. Whether the fire was started from a careless act or was willfully set must be determined in order to develop a successful fire investigation. Fire investigation must be concurrent with fire suppression. The investigator must arrive on the fire scene and complete the investigation as soon as possible, since evidence is easily destroyed. The information in this chapter will assist all personnel in completing this important, but tedious and time consuming job.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Introduction](#)

[Cause Determination](#)

[Investigator Resp.](#)

[Case Reports](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

4.1.2 CAUSE DETERMINATION - Initial Attack

Things To Do En Route To The Fire.

YOU MUST START YOUR FIELD NOTES AT THE TIME YOU RECEIVE THE FIRE REPORT. Your notes from the time the initial report of fire is received until you arrive at the fire should include the following information: Reference Wildfire Cause Determination Handbook (NFES 1874).

- Identification of yourself. Put your name, unit, and a title on your notes
- Time and date. Record the time and date you received the initial report of the fire.
- Person reporting fire. Record the complete identification of the person reporting the fire. This person may be the only witness your fire investigator will be able to interview. Be sure to get their address and telephone number, if possible.
- People and/or vehicles. Record complete descriptions (including license numbers), locations, and time of any people or vehicles observed coming from the direction of the fire.
- Gates and/or tracks. Record any gates that are broken, open, or locked. If on dirt roads or trails, watch carefully for vehicle tracks or footprints. Drive or walk in such a manner as to avoid disturbing these tracks. Notify the fire fighters following you of their presence and the need for protection.
- Smoke column. While en route, observe the appearance of the smoke column and make an estimate of wind direction and approximate speed. Estimate the size of the fire and record the time and observations in your notebook.
- Weather items. Record weather conditions, temperature, type of clouds, rain, etc.
- Other items. Things that are missing may be as important as things that are obvious. Make a note of both. If a camera is available, take pictures.

Natural-caused fires.

Lightning detection information, weather forecasts, and reports from the public can be used to determine whether there is a high probability of a lightning-caused fire. No further action is required if the fire is determined to be lightning caused.

Person-Caused Fires.

[Glossary](#)[References](#)[Rehabilitation](#)

Treat each fire investigation as if it is a criminal case. When you get to the fire, your first responsibility is to prevent further spread of the fire. At the same time, you should be able to do the following: MAKE NOTES OF YOUR ACTIONS.

- Estimate fire size. Record your estimate and the time of your estimate. Note direction and rate of spread, type of fuel, slope, wind direction and speed, and other weather conditions. Determine legal location of fire and verify with dispatch.
- Locate and protect general origin area of fire. If you are able to locate the fire's general area of origin as soon as you arrive, immediately flag the area. Evaluate the size of the fire and other factors in "A" above. Post a guard if possible, and flag the area surrounding the general origin. Keep suppression efforts in this area to a minimum. Ensure fire fighters do not put materials such as cigarette butts into this flagged area. If the fire is so large that the origin area is not easy to find, flag off or restrict access to a large area which you suspect contains the fire's immediate origin point. At this time, it is most important to protect the entire area from further disturbance.
- Search for and protect evidence. After protecting the origin area, look for such things as vehicle tracks, footprints, ignition devices, discarded Polaroid backings, paper bags, beer cans, or any other objects. DO NOT DISTURB THESE OBJECTS. Use flagging to mark anything you find. Tracks on roads can be protected by parking a vehicle over them. Footprints or tracks on trails should be protected by routing traffic to one side of the trail. If there is no way to avoid disturbing evidence, photograph if possible. Handle all evidence carefully and put it in a safe place. If the fire is determined to be person-caused but accidental, proceed with a normal civil course of action. If the fire is determined to be a person-caused suspected felony violation, involve a Service Law Enforcement Officer or Special Agent. At this point they will assume general case responsibility
- Identify witnesses. Interviewing witnesses at the scene is a very important part of a fire investigation but, because of varied State and Federal laws, possible suspects should be interviewed only by a trained investigator. You can help by recording the following information in your field notes:
 - Names, addresses, phone numbers, and descriptions of persons at the scene.
 - Make, license number, and description of vehicles at the scene; notes of any remarks made by persons at the scene that are in any way related to the fire.
- Other persons. Persons at the scene when you arrive or who arrive during the progress of a fire will often give written statements voluntarily, but would be reluctant to do so at a later date. Do not hesitate to capitalize on this situation. This should not be confused with interviewing a possible suspect. You are merely asking these persons to record any observations or other knowledge they are willing to give in their own handwriting. Whether this statement is ever introduced in a court of law is not as important as having an immediate and accurate record of all stated observations and knowledge. Do not share facts concerning the fire with anyone other than the Law Enforcement Officer, Fire Investigator, or the Fire Management Officer (FMO) who has responsibility for the Fire Management Program. The following guidelines can be used when obtaining voluntary statements
 - Have the person write the facts in detail.
 - If possible, provide the person with some degree of privacy so this can be accomplished without interruption.
 - Have the person number, date, and sign each page and include their address and phone number.
 - The person obtaining a voluntary statement should witness the statement by signing, dating, and recording time of statement
- Initial Attack Incident Commander (IAIC). The IAIC is responsible for protecting the fire scene origin and, if possible, starting the preliminary fire investigation or notifying the Fire Investigator.
- Service employees (Resource Specialist, fire crew). Service employees are responsible for protecting the fire scene origin and notifying their supervisor of any observation made relating to the fire. The fire investigation job cannot be accomplished by the Fire Investigator alone. The assistance of all Service employees is required.

4.1.3 WILDLAND FIRE INVESTIGATOR RESPONSIBILITIES

Service or local (State, county, etc.). Different violations have different burdens of proof and

elements to be proven. It is also recommended to look for signs of wildlife mortality and destroyed nests. (See Appendix for other violations.)

Duties and responsibilities. It is the responsibility of the Fire Investigator to determine and/or verify the point of origin and determine the cause of ignition. It is the duty of the Fire Investigator to attempt to locate individuals responsible for ignition of the fire. The Fire Investigator will be adequately prepared to process a case from the beginning to its conclusion.

Training and qualifications.

The Fire Investigator should have successfully completed an intermediate fire cause determination class. Normally, these classes are 40 to 80 hours in duration and cover char patterns and ignition sources, interviewing and case report preparation, and courtroom procedures and presentation.

Evidence.

Evidence has been defined as all the means by which any alleged matter of facts is established or disproved. It includes testimony, records, documents, objects, etc., that can be legally presented at a trial for the purpose of inducing a belief in the minds of the court and jury as to the truth of the issue involved.

- Collection of evidence. Evidence should be collected by a Fire Investigator whenever possible. Photograph and sketch the fire scene before collecting evidence
- Preservation of evidence. Utmost care must be taken in the preservation of evidence. Use clean, sealable metal containers. Avoid the use of plastic containers when accelerants are suspected. Keep damage to a minimum and protect the integrity of the evidence, i.e., fingerprints, etc.
- Recording of evidence.
 - Physical evidence: Photograph and inventory physical evidence
 - Witnesses' statements: Record in the case report exhibits, as appropriate
- Chain of custody. To further ensure the integrity of evidence and its "admissibility" in court, make sure all evidence shows a "track of security" and has not been tainted in any manner. Appropriate chain of custody receipts and storage in a secure, locked area ensure the chain of custody. The back of the FWS Evidence Seizure Tag (FWS Form 3-487) is a good place to track chain of custody.
- Disposition of evidence. Upon a finding by the court of the suspect's guilt or innocence, the court will direct the disposition of evidence. Be sure to obtain a written document as to the court's disposition directions and a receipt for the action completed. In out-of-court settlements, the disposition of evidence should be included in the settlement agreement. If not addressed in the written agreement, the property will be disposed of in accordance with Service Property Disposal Procedures.

4.1.4 WILDLAND FIRE INVESTIGATION CASE REPORTS

At this point, an Initial Report of Unauthorized Use (see Illustration 1, I-C [sample]) has been completed and submitted to the Project Leader. The recommendation is to proceed with further investigation. The only question at this point is whether this will be a civil or criminal investigation. Law Enforcement will be consulted to determine in which direction to proceed. The Initial Report of Unauthorized Use will become a part of the investigative report.

A trespass case number will be assigned from the Document Control Register (LEMAS) or Law Enforcement Incident Log maintained at each Refuge office. The investigation will then proceed. At this point, the trespass is still in the administrative process. The Service could issue a billing and make full recovery of costs. We have not gone to the judicial system yet.

Civil.

- Format. The case report should be divided into five parts: Title Page, Synopsis, Persons Named in the Report, Fire Investigation, and Appendix.
 - Title Page.
 - Fire name and number
 - Refuge
 - Fire date
 - Report prepared by
 - Position title
 - Period of investigation
 - Date of report
 - Synopsis. The Synopsis should be as brief as the writer deems necessary to explain the case and to tie evidence into a narrative description. Discuss specific elements of the violation (e.g., willfully and without authority, sets fire on National Wildlife Refuge). The writer should present facts that show negligence and discuss any problems of conflicting evidence. It is not a substitute for the investigation portion of the report. It should be factual, rather than conclusive. It should be based upon the evidence developed during the investigation.
 - Persons named in the report. Attach a list of all persons mentioned in the report by full name, address, phone number, and occupation
 - Investigation. This is the body of the report. It should consist of a chronological description of what the Fire Investigator did in the investigation, whom he spoke with and when, what was said, and what was observed. It is an account of all matters developed in the investigation. Even minor things can prove extremely important at a later date. Give authentic information regarding the names of property owners who are involved in the case and any other individuals who might be connected with the case, either as defendants or in any other direct manner.
 - Appendix. Attach maps, sketches, and photographs which will aid in comprehending locations, conditions, and circumstances described in the report. Attach any statements taken from witnesses and a list of who was interviewed without written statements, and to what they can attest. Include all related reports and forms relevant to the case such as burning permits, Notice of Violation, record of fire conditions, operating permits, slash status, weather records, dispatch and radio logs.
- Processing. Once evidence has been processed and suppression costs determined, the case report should be put in final form. The case report should be submitted for review to the FMO and Project Leader.

If a responsible party has been identified, a billing will be prepared and cost collection procedures begun. A copy of the fire investigative report should be included in the fire package.

Criminal.

- Investigative reports - criminal.
 - The incident report is given a number and opens the case. It includes:
 - Subject - address and physical description.
 - Reporting person - either a confidential informant (CI) or informant. Include address and phone number for informant, but not for the CI.
 - Details clearly stating the violation and the "who, what, where, when, why, and how" in a brief paragraph or two.
 - Action and recommendation - describe what actions are to be initiated and recommendations to consider.

- The investigative report consists of:
 - Cover page with primary information as to suspect, witnesses, violation, and a short synopsis.
 - Investigative results report which includes all actions taken by the Fire Investigator concerning evidence collected, persons interviewed, sketches, photographs, chain of custody receipts, and disposition form used when the case has been adjudicated.
 - Format example of the chronological order of a criminal report
 - Criminal complaint
 - Investigative report
 - Investigative results
 - Statement(s) of witness(es)
 - Statement(s) of suspect(s)
 - Photographs
 - Sketches
 - Evidence exhibits

[Exhibit 4-1-1: Wildland Fire Investigation Illustration](#)

[Exhibit 4-1-2: Sample Case Report](#)

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EXHIBIT 4-1-2: SAMPLE CASE REPORT

CONFIDENTIAL

WILDFIRE INVESTIGATIVE CASE REPORT

[Back](#)

Fire Name & Number: Banner Fire #096

Refuge: Chincoteague

Fire Date: June 23, 1997

Report Prepared By: John Roness

Position Title: Forest Technician

Period of Investigation: June 24 - August 23, 1997 [\(1\)](#)

Date of Report: August 26, 1997

SYNOPSIS

Investigation reveals that the above fire was caused by sparks from an HD 14 Allis-Chalmers loader being used by Don Banner Logging Company on the day the fire started. This loader was not equipped with a spark arrester or any device to prevent the escape of sparks as required by Oregon Forest Law, Chapter 477.645, and OAR 629-43-015. There is also evidence that on the morning of the fire there was a small fire at the landing in the vicinity of the origin of the later fire which was not properly extinguished, and either caused the main fire or contributed to its ignition and spread.

On June 23, 1997, the Don Banner Logging Company was conducting logging operations in Section 2, Township 33 South, Range 8 West, near the town of Mono in Josephine County. Sometime during the morning a fire started near the diesel loader, which was being used to load logs on Banner's trucks to take to his mill in Mono. These logs had been cut during the previous year, and there was much dry slash on the ground. During the week preceding this operation the temperature had been high, with low afternoon humidity and easterly winds. These conditions prevailed on June 23.

During the morning of the operation on the 23rd, there had been a small fire on the north slope of the landing near the loader. Harper, the loader operator, claims to have put this fire out. Banner claims to have sent a man to the landing from Mono to have the operation shut down because of low humidity around 11 a.m.; however, Herman Franks, Banner's foreman at the landing, had the loader operate until 12:45 p.m. to finish loading. The fire was reported at 2:11 p.m. The State Forestry Department arrived at 2:30 p.m. and observed the fire burning on the north slope of the landing behind the loader.

Investigation of the origin area revealed the fire had started in or near a clump of matted, dried grass about 25 feet from and in line with the tailpipe of the loader. The undersigned is of the opinion that the fire was caused by sparks from the loader, which was not equipped with a spark arrester.

This is further borne out by the observation of persons who were at the scene at the time and said they first observed the fire behind the loader on the north slope. It was apparently commonly known that the loader could start a fire and that it shot out sparks "like a Roman candle." The sparks from

this loader either directly caused the fire to break out, or the fire earlier that morning had not been properly extinguished and smoldered, causing the fire.

A Notice of Violation and Notice to Appear were issued to Banner, and a complaint charging Banner with violation of ORS 477.645 has been filed in Josephine County District Court. Hearing has been set for September 15, 1976.

Persons Named in the Report

John J. Rones Oregon State Department of Forestry 1825 West Elm Street Roseburg, Oregon 97842 Telephone (503) 627-4831 Unit Forester	A. L. Harper 710-1/2 Clover Lane Mono, Oregon 97842
William Able Mono Guard Station 927 Fury Lane Mono, Oregon 97247 Telephone (503) 726-1384 Forest Officer	Bill Isle 17 Bush Street Mono, Oregon 97842 Logging Crew Member
Fred Cook Robert Day Mono Guard Station 927 Fury Lane Mono, Oregon 97247 Telephone (503) 726-1384 Fire Fighters	Jake Jones 3120 Flower Street Mono, Oregon 97842
Don Banner 231 West High Street Mono, Oregon 97842 Telephone (503) 627-4832 Owner, Banner Logging Company	"Loop" Klappett Box 30 Mono, Oregon 97842
Herman Franks Box 296 Mono, Oregon 97842 Telephone (503) 627-4931 Foreman, Banner Logging Company	Clark Mann Address Unknown (Moved to Alaska)
Ansil Adams 12684 Highland Circle Roseburg, Oregon 97924 Telephone (503) 496-8721 Timber Owner	Mrs. Clara Nodel Mount Baldy Lookout No Telephone Lookout
	Syd O'Neal 72 Maiden Lane Mono, Oregon 97842 Telephone (503) 672-9112 Adjacent Owner
	Fred Pratt 97274 Honeydew Boulevard Halfway, Oregon 97392 Telephone (503) 222-2222 Incident Commander
	T. V. Quick Address/Phone Burned Mono, Oregon 97842 Burned-out/Upset Homeowner

INVESTIGATION [\(2\)](#)

1. On June 24, 1997, the undersigned was assigned to investigate the subject fire.
2. That day at 1530 hours I contacted William Able, Forest Officer at the Mono Guard Station. He was the first person to arrive at the fire. [\(3\)](#) Able said that on the previous day, June 23, 1997, at 2:11 p.m., he was at the station and received a radio call from the Mount Baldy Lookout reporting a fire about 2 miles north of the station near the Banner Logging Company logging operations.

He said he and Fred Cook and Bob Day, [\(4\)](#) both fire fighters, arrived at the fire about 2:30 p.m. The fire was around 5 acres in size, burning on the north slope of a log landing. The fire had burned and was burning in a "V" shape up the slope, with the base of the "V" about 20 feet above the level of the landing. There was no one at the landing at the time, but he later saw several men working at the head of the fire, over the ridge above it. The fire was burning fast and hot in slash and brush. There was very little wind at the landing, but he could see that a wind was blowing the fire at the top of the ridge near the head. [\(5\)](#)

He said he called for help when he returned to the truck, and went around to the other side of the hill to start work on the head of the fire. He said he worked on the fire the rest of that day, and had not talked with any of the men who were already there about the fire or how it started.

3. At the same time I talked with Fred Cook and Bob Day, both fire fighters. Cook stated he went with Able to see the fire when they first arrived. They had to park the truck on the hill leading up to the landing since they couldn't get through. He affirmed what Able had said. Day stated he hadn't seen anything since he had remained with the truck. [\(6\)](#)

4. Able, Cook, Day, and I went to the landing that day about 5 p.m. Able and Cook pointed out where the fire was when they first saw it. At this time, I took a photo of the north slope of the hill. Later on July 5, 1997, Able made the marks shown on the photo to indicate where the fire was burning and had burned when he arrived and first saw it. [\(7\)](#)

The landing is about 1 acre in size. When we were there, there was a log deck in approximately the center with around a dozen logs on it.

The landing is saucer shaped, surrounded on the north, east, and south sides by steep slopes covered with burned remains of slash, logs, and brush. A spar pole is located to the north of the deck, and an AC HC 14 diesel loader was about 50 feet to the east and about 10 feet from the north slope. The attached diagram shows their relative positions. The road leading into the landing is on the west. [\(8\)](#)

The place on the hill where Able said he first saw the base of the "V" of already burned material was on the slope behind the loader. The tailpipe of the loader was canted at an angle and pointed toward the direction of the slope. We measured and found that the distance from the end of the pipe to the slope in a clump of charred and matted grass near the base of the "V" to be 25 feet. This area was practically in direct line with the tailpipe.

The loader had no muffler or spark arrester of any kind. The attached photo shows the loader and the tailpipe, and the absence of any spark arrester. Photos demonstrate the line of the tailpipe with the deeply charred and matted grass on the hill behind it. [\(9\)](#)

5. The following day, June 25, 1997, at 10:30 a.m., I talked with Don Banner, owner and operator of the Banner Logging Company, [\(10\)](#) at his home at 231 West High Street, Mono, Oregon. [\(11\)](#)

He stated he had not been present at the landing when the fire started. [\(12\)](#) He said he had been at his mill in Mono at the time. He stated he had been logging at the landing during the morning of June 23, 1997, but had shut down about noon because of low humidity.

He said he had sent a man out around noon from the mill to tell his foreman, Herman Franks, to close down. [\(13\)](#)

Banner stated he had around 12 men working at the landing on the morning of the fire. They were skidding and loading logs he had cut during the previous season under a contract he had with Ansil Adams, owner of the timber. The logs were being hauled to his mill in Mono.

Banner said he had no idea how the fire started. He suggested that it may have been started by hunters.

6. Franks, Banner's foreman, was at the mill at the time and I talked with him after talking with Banner. Banner was present when I spoke with Franks. Franks' address is Box 296, Mono. He lives about 3 miles east of Mono on Highway 19 at the Happy Dell Trailer Oasis. [\(14\)](#)

Franks stated he had started working on the morning of the fire about 6 a.m., skidding cut logs and loading them. I asked him if he had seen the fire start, and he said that he had not. I asked him when it started, and he said around 1 p.m. I asked him how he remembered the time. He said he had shut down about 12 noon because of low humidity. Everyone was sitting around eating lunch when the fire was first observed. I asked him where the fire was when he first saw it, and he said it was high on the ridge above the landing. He drew a sketch to show me; he located the fire at that time about 200 feet up the north slope.

He said the fire was about 20 feet in diameter when he first saw it. A copy of this sketch and his distances, written by him, is attached. [\(15\)](#)

I asked him whether this was the fire that escaped and caused the wildfire. He said all of his men went up to put it out but by the time they could reach it, it was too big to handle.

I asked him whether he had a fire anywhere on the slope in back of the loader that morning. He said there had been a "smudge" in some grass near there a little earlier in the morning, but that it had been put out. He was sure that hadn't caused the fire because that fire had been put all the way out.

I again asked him how long after he first saw the fire that it got away. He said, "Almost immediately. It seemed to explode."

I asked him whether he could be mistaken as to the time the fire got away. Could it have been around 2 p.m.?

He said no, because he was at the mill at 2 p.m. He had gone back to report the fire and get help. [\(16\)](#)

He added that the cats had stopped working around noon, but that they had loaded until about 12:45 p.m. because he did not want to send any trucks back empty.

I asked him who had been working at the landing that morning. He couldn't remember all their names,

but said the following were there:

A. L. Harper, operated the ladder, address unknown.
Bill Isle, a faller, address unknown.
Jake Jones, a cat operator, address unknown.
"Loop" Klappett, a cat operator, address unknown. [\(17\)](#)

Banner said he had their addresses, but it would take some time to round them up.

7. On June 26, 1997, I contacted Mrs. Clara Nodel (lookout at the Mount Baldy Lookout Station), who was on duty the afternoon of June 23, 1997. [\(18\)](#)

She stated she remembered the report of the fire very clearly. The lookout is located about 3 miles west of where the smoke was first observed. It looks down into the canyon where Banner's operations were taking place. When she first saw the smoke, it was a thin blue column extending around 1,000 feet into the air. It remained this way for about 10 minutes and then broadened quickly. It seemed to spread very fast after that. It burned up the mountain toward the lookout that afternoon and at 6:30 p.m., from her log, the station was evacuated because it was threatened by fire. She went in again the next morning. The fire did not do any damage, though it burned to the edge of the clearing around the station.

The station is located about 1,000 feet above where the fire was first observed. The weather records of the station taken and recorded by Mrs. Nodel show a period of low humidity, high afternoon temperatures, and late afternoon easterly winds for the week prior to the fire. A copy of these records is attached to this report. The originals of these records are located at the Grants Pass Unit headquarters and will be retained until further word is received on this matter.

Mrs. Nodel checked her log and fire sightings, and verified that she first observed and reported the fire at 2:10 p.m. on June 23, 1997. A copy of the Lookout's Smoke Report and radio log is attached showing her entry of this sighting.

8. On June 27, 1997, [\(19\)](#) I located A. L. Harper at his home at 710-1/2 Clover Lane, Mono, at about 1:30 p.m. I was accompanied by Bob Land, Forest Officer. Mrs. Harper was also present during the interview. [\(20\)](#)

Harper stated he had been operating the loader on the morning of the fire. He remembered they had closed down the operation because of low humidity. He couldn't remember the time. He couldn't remember whether it was before or after lunch. He said he had just turned off the loader when he heard someone yell, "Fire!" He turned around and saw a fire about 50 feet up the hill in back of the loader. It was about 10 or 15 yards square, and was burning pretty fast and hot. He and the others at the landing immediately went up to where the fire was burning and started putting a line around it. He doesn't remember how long they worked on it, but it seemed a long while. It looked as though they had pretty well gotten it out when a gust of wind came up and started a couple of spots up the hill. By the time they reached these spots, the fire was all over the hill. It spread up and over the ridge, and there was nothing they could do.

He said he did not notice what the others were doing and he did not know where Franks was during this time, though he imagined he was working with the others.

I asked him when the small fire earlier in the day had occurred. He was surprised I knew about this fire. He said it was a small fire in some grass up on the hill. I asked how high it was and he became evasive - he couldn't remember. I asked him whether it had been put out. He said he had put the fire out himself and had Franks come over and take a look to make sure it was out. He said he didn't want

to take any chances with a fire happening near his loader. I asked him what he meant, but he said he thought he had said enough.

When asked who was working on that morning, he said: [\(21\)](#)

Franks, foreman.
Bill Isle, faller, address unknown.

9. On June 28, 1997, I contacted Bill Isle, Banner's faller, at a bar in Mono called the Fallen Angel. Land was also present. Isle's address is 17 Brush Street, Mono.

When I asked Isle about the fire, he asked me not to ask him any questions about it. I asked him why. He said he knew I was investigating the fire and if he said anything that might hurt Banner, it could hurt him (Isle). He had to live too, he said. I asked Isle whether he thought that anything he said would hurt Banner. He said Banner was a fine fellow, and he didn't want any tricks. That was all we could get from him. [\(22\)](#)

10. At about 2:45 p.m. that afternoon I contacted Jake Jones at his home at 3120 Flower Street in Mono. Land was present.

Jones said he didn't know anything about the fire earlier in the morning, but he remembers the big fire. He said everyone knew the fire had been caused by that old loader, but if he were asked that question in court he would deny he ever said it. He said they were loading a bunch of logs on a truck that came up after they had all knocked off for lunch. He thought they had closed down because of humidity, but when this truck came Franks decided to load it. They were right in the middle of loading when someone yelled, "Fire!" [\(23\)](#) Jones said his back was to the fire and when he turned around, he saw a small fire burning about halfway up the slope. He couldn't estimate the distance, nor does he remember its position in relation to the loader, but it was not any 200 feet up the slope. [\(24\)](#)

He stated he went up with the others to try to put it out. He said they worked on it for a while, but a wind came up and spread it up the hill. There wasn't anything that could be done after that. [\(25\)](#)

I asked him how he knew the fire had been started from the loader. He answered that the loader didn't have any muffler on it, and every time it was revved up it sprayed sparks " like a Roman candle." [\(26\)](#) He said he would testify to the sparks he saw come from the loader, but that he wouldn't say the fire started from the loader.

I noted that he spoke bitterly about Banner, and I asked him whether he and Banner got along all right. He said they got along fine, except Banner owed him wages from a previous job, hadn't paid him for it, and claimed he didn't owe him.

He then went into a long story as to why Banner owed him the money. [\(27\)](#)

I asked him who else was at the landing at the time of the fire. He said:

Franks, foreman.
Harper, operated the loader.
Bill Isle, a faller.
Clark Mann, a faller.

Jones said he knew Mann, and right after the fire Mann went to Alaska. He didn't know how he could

be contacted.

11. I located "Loop" Klappett, Box 30, Mono, at the timber operations of Hardey Logging Company near Plowtown, Oregon, on July 16, 1997. Land was also present. Klappett said he had not been working for Banner on the day the fire started. He had worked for him the preceding week, but after drawing his time on Friday, had gone to Portland and hadn't returned until the day before yesterday. [\(28\)](#)

12. In order to further check out the names and addresses of everyone at the landing and to check about the maintenance of the loader, I telephoned Banner at his home on the night of July 16, 1997. I asked him the above questions and he said his attorney had told him not to talk to any Forestry Department people about the fire. He said he couldn't give any more information on this matter under the circumstances. [\(29\)](#)

13. On August 2, 1997, I contacted Mr. Syd O'Neal, adjoining landowner, at his home at 72 Maiden Lane, Mono.

Mr. O'Neal stated he and his insurance company estimated that 750 acres of his land, including his barn and \$2,000 worth of hay, had been burned in the fire. He stated he owns about 2,500 acres of land in all. On the boundary between his land and that on which Banner was cutting, there is a fence which follows the section line for about a mile and a half. He said that last year Banner had come to him and asked him about this fence since he understood he was to cut to the creek, which lies about 100 feet inside O'Neal's property from this fence. O'Neal talked with Ansil Adams, the owner of the land. Adams must have told Banner to cut to the fence line because he never heard anything more about it.

O'Neal had checked the cutting during the previous year, and Banner had stopped at the fence line. [\(30\)](#) In any event, O'Neal said, the fire burned past this fence line and the creek and into his property about a mile before it was stopped.

He was satisfied with the manner in which the department had fought the fire on his property, but said he heard there was dissatisfaction about the way the fire had been fought to the east of his property. He didn't know any details and did not want to mention any names. [\(31\)](#) He would not say any more.

14. I talked with Fred Pratt, State fire boss on the fire, on August 12, 1997. I told him what Mr. O'Neal had said and asked him if he knew what O'Neal meant, and whether there had been any difficulty in fighting the fire in general.

Pratt said the complaint probably came from T. V. Quick, the owner just east of O'Neal. Quick had lost his home and felt the Department had not given enough protection to it. The house was constructed in a clearing near the property line between his and Adams' timber and about a mile from the origin area. Grass was growing right up to the house and the timber came up to 30 feet all around the house. Late on the afternoon of June 23, 1997, the fire caught in some heavy slash to the north of the house and took off. A heavy wind came up and spread the fire toward the house. It was an impossible place to put in protection lines. If anyone tried to stay in there and protect the house, they would have been killed.

Right after the State crews arrived, Mr. Quick was evacuated from his house. He put up a fuss when we told him that he and his family should clear out as soon as possible. Afterwards he came up to me and said he had five men who had told him the fire crews had panicked and could have saved the house if they had remained. This is untrue.

The fire was generally difficult to control because it burned mostly in dried slash from the year before.

Late afternoon winds on the first day caused the fire to spread almost 2 miles before it died down during the night. It was fortunate there were enough men to take advantage of the break that night and the next morning and keep it from going farther. [\(32\)](#)

15. Attached is the District Fire Cost Report, showing fire suppression costs incurred on this fire were \$14,350. [\(33\)](#)

16. Attached is the District Fire Report, showing action taken by the Forestry Department on this fire. [\(34\)](#)

17. Attached are the Notice of Violation and Notice to Appear issued to Banner for violation of ORS 477.645. [\(35\)](#)

18. Attached are signed statements taken during investigation and a list of individuals interviewed and to what they can attest.

19. Attached are copies of all Record of Fire Conditions and Request for Assistance issued during fire action.

[\(36\)](#)

Endnotes

1. The period covered should be the time from start to finish of the investigation. It does not imply that this period was exclusively devoted to the investigation of this matter. It is only to indicate the cut-off date to know what later events are covered by the report. Later relevant events or information can be reported by supplement.

2. This is the body of the report. It should consist of a chronological description of what the investigator did in their investigation, whom they talked to and when, what they said, and what they observed. It is an account of the important matters.

3. The first person or crew on a fire should always be contacted early in the investigation. Their observations will give critical information about the location, size, etc., of the fire before it was too large to form a conclusion as to where and how it started, etc. Also note that it is frequently desirable to commence an investigation by questioning persons with the Refuge or others who would be expected to testify to essential facts. In this case, the location of the fire at its first observation by persons not motivated by bias to claim it was elsewhere is vital.

4. Be sure to ascertain any other persons present when witnesses observe important facts. Question these persons as to corroborating facts. (See footnote 4.)

5. These are valuable observations. Such evidence often can be decisive to dispute claims of a potential defendant stating the fire started far from any operations he was conducting. The fire may burn over the area later and completely destroy evidence of where the origin was or how it was burning.

6. See footnote 3. Cook could be an independent witness of the essential facts. It is explained why Day cannot testify to these facts: It is because he did not go up - not because he did not appear, as able and Cook say they did.

7. Able's description to Rones, the Fire Investigator, and the narrative of the report cannot convey the details necessary to continue effectively. Hence, Rones wants to see exactly where the fire was when Able saw it and clear up any questions he may have as soon as possible. This use of a photo is invaluable. It shows the marks on it are Able's, not Rones trying to reconstruct what Able said - which may be wrong.

8. Try to imagine you are describing the area to someone who has never seen it. A series of photos could be used for this purpose, but there is no substitute for a clear, verbal, narrative description of what is there. A sketch showing important references which will be used throughout the report to refer to places other witnesses are likely to (or do) refer to avoids confusion and will assist in setting these facts on paper.

9. The most effective use of photos is to show exactly what is on the ground. They are not substitutes for clear explanation, but add to clear verbal description. A jury seeing an important fact in a photo, just the way you testify, cannot help but be impressed.

10. No investigation is complete unless the person upon whom responsibility is finally indicated is talked to, particularly in circumstantial cases. His explanation of what occurred may well include the investigation. His excuse or view of the facts may well be the one presented at any trial of the matter; this should be known. His statements may be inaccurate or colored with bias, but they should be included in the report. Even if these statements indicate an absolute defense to what happened and there is no indication they are false, they should always be included. When this party is interviewed will depend upon the judgement of the Fire Investigator. It is best to interview him, however, after as many definite facts as possible are established for the obvious reason that your questions can then be as precise as possible. Otherwise, the questioning tends to wander and the party can effectively evade or avoid areas which you may not have reason to pursue. When you come back to check these out, he may not even talk to you. (See footnote 28.)

11. Note that the addresses of any persons referred to should be included. This is necessary for directing demands and serving summons and complaints or subpoenas, if necessary. It is also necessary for the attorney to know, should he wish to take the person's deposition.

12. Remember that - concerning important matters - what a person says he does not know, particularly one upon whom suspicion rests, is as important as what he does know. He will have trouble testifying at trial to what he previously said he did not know in this respect.

13. Note that if an employer or principal is to be held liable for the torts of his employee or agent, evidence of the agency or employment and the scope of his authority to act on the employer's behalf must be introduced. This evidence may be in the form of facts showing the employment independently. A statement by the employer to this effect, however, coupled with evidence of what duties that agent actually performed, is effective for this purpose. An investigator should not rely solely on the statement of the employee as to who his employer is as this evidence is given very little weight and is often inadmissible to prove the employment.

14. See footnote 10. A box number as an address is of no help in giving directions to a sheriff in serving a subpoena or summons and complaint.

15. Note that this sketch is attached to the report as an exhibit. It should be included as an actual copy of the sketch made by the witness. Franks' statement is in conflict with what Able and Day said. To be sure you have not misunderstood Franks and to inform what Banner's probable defense of hunters will be based upon, this information should be included. This is the first major inconsistency in your theory, and suggests you should quickly talk with others at the landing to ascertain whether they will also testify that the fire started so far up the hill. This is also the point where the investigator may well wish to consider getting written statements from others at the landing because of the possibility that Banner may talk to them and convince them that the fire was high, or suggest this fact if they don't

actually remember.

16.The inconsistency as to the time the fire started may or may not prove to be important. Franks says the fire escaped immediately at 1 p.m. This may be based upon inaccurate estimation of the time it started or what he means by "immediately." It may be a feeble attempt to suggest that the fire had nothing to do with his operations since he may suspect that you know exactly when it first got away.

17.These are, of course, essential persons to talk to as soon as possible. They are possible witnesses as to exactly where the fire occurred and what caused it. It will take a great deal of opinion testimony and hypothetical testimony to overcome the statements of five or six persons who actually say they saw the fire start at a place and in a manner totally inconsistent from your theories. They must be reached as quickly as possible for their memories may be bad, or someone else could suggest other possibilities which might cause them to doubt what they actually saw. Note the fact that Banner and Franks do not give the addresses may be an attempt to slow down the investigation.

18.The interview with the lookout can often be very useful in developing what occurred during the initial spread of the fire. Her log will verify Able's recollection of the time of the report of the fire, and will give a jury visible evidence of the entry of the sighting of the fire should this time become important. If the lookout is close enough, her recorded weather observations will help to establish the weather picture. Often, the lookout's description of a fire and its spread is very dramatic and helps to paint the picture of the spread of the fire to a jury who may only hear about it from seasoned firemen, who tend to take such matters in stride.

19.It may often be very difficult to locate a person who has been referred to you. It is not necessary to describe your efforts in your report unless germane to some issue in the matter.

20.Note that Ronex has decided to take an assistant with him in interviewing those at the landing. This, in lieu of written statements, is for the judgment of the investigator. Note also who else was in attendance at the interview. Should it be necessary to prove what a person has said - either by way of proving his admission or to impeach the person if he testifies differently on the stand - the investigator should have a record as to when, where, and who was present when the statement was made. The form of this report is in part designed to establish and record the information as a routine matter.

21.Asking each person at the landing who else was there will not only be a check against the recollection of the others, but may reveal the names of persons whom Franks feels would not help him and, hence, whom he "doesn't recall" at the time.

22.This is typical of negative information which, far from hurting the case, may be of invaluable help should Isle decide to testify on Banner's behalf at the trial. It shows not only that he refused to say anything to the investigator, which might throw light on the incident, but that he is probably prejudiced in favor of Banner and his testimony would have to be tempered accordingly.

23.Franks had said they had just stopped loading and Harper had said he had just turned off the engine when they first saw the fire. These could be mistaken estimates or consciousness on their part that operation of the loader was connected with the fire, particularly after they had been told to stop because of low humidity. Jones' statement, however, strongly suggests such a connection.

24.One may be reluctant to be tied down on exact location, so the reverse approach may be helpful to have the witness indicate it was not as far up the hill as Franks says it was.

25.This helps explain the time difference when Franks said the fire escaped and when it was first reported. They apparently fought the fire for a while before it went off "immediately." It may be that Franks either has an aversion for the truth or he may deeply feel that not enough was done to control

the fire while it could have been stopped, and was attempting to steer the investigator away from inquiring into the point.

26. An investigator would be lucky to get this kind of evidence. The description, however graphic, is undoubtedly exaggerated. This witness appears friendly now, and it might be advisable to get his written statement in case Banner decides to pay him his back wages.

27. This witness has corroborated many facts of your case. It would be a mistake, however, to stop your investigation at this point. You want to get as many statements as possible from those at the landing at the time. Remember that this fellow might be as prejudiced against Banner as some others are for him. He might even see this as a possible means of blackmailing Banner into giving him wages to which he is actually not entitled.

28. This is further negative information which should be included. See footnote 11.

29. Usually an investigation cannot be conducted from a desk, and the best way to find out what people know is to talk with them face to face. Therefore, a telephone contact of this sort is not recommended, except perhaps to make an appointment. Should a person indicate that he has been advised by his attorney not to talk with you, you should not attempt to contact him. Sometimes an attorney will call you direct and advise you not to get in touch with his client. You should not attempt to do so. This is particularly important if a criminal or civil case is pending in the matter against the attorney's client. It is highly improper in such a case for opposing counsel or his investigator to contact the client directly. At the trial you may testify to the fact that you attempted to obtain further information, but were unable to do so because you were told that the party would not talk to you on advice of counsel.

30. An often neglected part of investigations is to ascertain what proof is available as to the fact that the fire escaped to the property of another. It may be in this particular case that the fact the fire burned to the land of Adams, the party with whom Banner had contracted, is sufficient for this purpose. This information from O'Neal, however, avoids the necessity of relying upon Adams - who, depending upon the nature of his contract with Banner, may himself be liable under the Landowner/Operator Liability Law. O'Neal's information suggests there are no boundary line disputes which would have to be settled in the present case to enforce the State's claim.

31. Whenever it is suggested that the Department did not properly control the fire, be sure to check into the matter. The claim of improper or incompetent fire fighting may be of no substance. If it appears that the person responsible for the fire will make such a contention, the matter should be brought out in the report so that a proper evaluation may be made of the case.

32. See footnote 30. Note also that a preliminary inquiry of the fire boss or line boss as to the difficulty in fighting the fire may well be made during the investigation. Testimony from these persons will generally be necessary to establish that costs were in fact incurred and that they were incurred in fighting this fire. If a particularly large amount is spent, a jury may question its reasonableness unless such persons can testify there were difficulties in fighting the fire which required certain men or equipment. This preliminary inquiry may bring out important considerations, such as the fact that great efforts had to be made to protect a Boy Scout camp with 100 children campers. Other than its impact, no one will question the expenditure of funds to afford such protection.

33. No further explanation than this is usually required. Note, however, if it is determined the matter will be pursued by a court action, all of the underlying records of this fire cost report should be assembled and kept.

34. Always include the District Fire Report. The investigator should always verify the accuracy of this report against any other information he has obtained from others, such as first report of the fire, first

person to respond, time of response, weather observations, etc. If inconsistencies are noted, an appropriate memorandum to the file should be made by the person responsible for the report. This is a public record. It can readily be seen how an attorney could cast doubt upon the testimony of Able, for example, when the report shows that someone else was first on the fire (20 minutes, for instance) after he actually arrived.

35. Where a strong case is indicated, it is not necessary to await the outcome of any pending criminal action before submitting the report. If the matter is actually taken to trial and a conviction is obtained, this fact cannot be used in evidence in the civil case for fire suppression costs. If the criminal trial does not convict, this does not bar the civil action. If the defendant pleads guilty, this fact may be used in evidence as an admission. If the trial turns up something unexpected, or the defendant attempts to justify his conduct in any way, or any other matter which in the judgment of the investigator will affect future handling of the matter, he should prepare a supplemental report and point these things out.

36. Every report should be signed by the person making it.



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Introduction\]](#) [\[Res. Damage\]](#) [\[Phys. Damage\]](#) [\[Off-site Values\]](#) [\[FWS Costs\]](#) [\[Cost Database\]](#) [\[Other Costs\]](#)



4.2 COST DETERMINATION

4.2.1 INTRODUCTION

All costs associated with a fire are to be determined by a qualified specialist who can assess damages and complete a damage appraisal report to accompany the fire trespass case.

Based on the appraisal, all costs to be reimbursed by the responsible party are determined and prepared by the associated refuge office. Calculation should encompass all costs, including those associated with the Service, States, other Federal agencies, rural fire districts, etc., and include resource damage rehabilitation costs, costs of repair or replacement of physical improvements, as well as all associated administrative costs.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

Every attempt should be made to include all costs on the initial Bill for Collection. However, costs incurred after the initial bill has been sent should be documented with a subsequent Bill for Collection being sent or added during negotiation or with any settlement as a result of a court trial. The Service's Finance Center will follow up on any bills issued and not paid or not paid in full.

4.2.2. RESOURCE DAMAGES

Each burned area will be examined and the damages evaluated. The appropriate Resource Specialist should make the appraisal. Generally, damages will be the cost of emergency fire rehabilitation plus any value of resources burned, less any salvage value.

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Rehabilitation Costs.](#)

These are charged to emergency fire rehabilitation funds and must be tied to a specific fire number (i.e., **five_digit organization code_9262_fire number**). Emergency fire rehabilitation is planned actions taken during and after a wildland fire to stabilize and prevent unacceptable resource degradation or to minimize threats to life or property resulting from the fire. It includes such costs as reseedling to prevent immediate wind or water erosion and to prevent establishment of undesirable vegetative species, fencing of areas to prevent animals or humans from entering sensitive areas, and felling damaged trees posing threats to human safety. Emergency rehabilitation for any one fire shall not exceed 3 years or 2 full growing seasons. A Burned Area Emergency Rehabilitation Plan must be submitted and approved within 45 days following the fire being controlled in order to qualify for emergency funding. Extensions to the 45 day approval requirement must be approved at either the Regional or Washington level depending on approval cost criteria.

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Damage Restoration](#)

This is the non-emergency replacement of facilities and resources damaged by wildland fire or the re-establishment of ecosystem structure and functions. Restoration projects are programmed and budgeted through normal procedures.

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Introduction](#)

[Res. Damage](#)

[Phys. Damage](#)

[Off-site Values](#)

[FWS Costs](#)

[Cost Database](#)

[Other Costs](#)

[Suppression Related Rehabilitation Costs.](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

These are charged to fire suppression (subactivity XXXX) for rehabilitating on-site and off-site damage to resources caused by fire fighting actions, and are part of the fire bill.

4.2.3. PHYSICAL IMPROVEMENT DAMAGE

The damage or destruction of an improvement caused by the fire or fire suppression acts should be examined by qualified specialists and the cost of repair or replacement determined through bid estimates, appraisal, or contracting. Include only refuge-owned improvements.

4.2.4. OFF-SITE VALUES

These values are usually related to water structures which have dried up or in some other way have been damaged as a result of fire. Damage should be assessed using replacement cost. The damage of off-site values caused by the fire and/or fire suppression acts should be examined by qualified specialists and the cost of rehabilitation and/or values lost and repair or replacement determined through bid estimates, appraisal, or contracting.

4.2.5. SERVICE SUPPRESSION COSTS

All direct costs incurred for the benefit of a specific fire are properly included as true fire costs for that case. They will include charges by the Service through Refuge(s), Regional Office(s), Office of Aircraft Services (OAS), National Interagency Fire Center (NIFC), Alaska Fire Service, agency fire caches, and agency coordination and dispatch centers. Other direct costs, such as the cost of fire investigation and preparing and processing a report, should be charged to fire suppression (9261-fire number).

These direct costs are the amounts applicable to a specific fire case that can be accurately and readily determined. Fire costs improperly charged to a fire should not be included in a billing. In order to accurately account for these fire costs, it is important that all Service financial input documents are coded directly to the specific fire number. Subsequently, all reasonable and necessary Service suppression costs will be reflected on the Fire Suppression Cost Report/Project Obligation Transactions Report produced by the Service's Financial Management Section.

The 9261 subactivity is used by the Service as a means of tracking (rolling up) wildland fire suppression costs within the Federal Financial System (FFS).

SUBACTIVITY: 9261 - Suppression Operations.

All wildland fires on Service lands will receive an Incident Number that is assigned through the Fire Management Information System (FMIS) Fire Occurrence Subsystem. These numbers will be Region specific and tracked within FFS. An account in Denver will be set up after they receive charges to an incident number. The account is not activated until there are charges against it.

Indirect (Administrative) Costs.

The indirect cost rate (3%) should be added to the Service's direct amount being billed. Administrative/indirect costs include centralized data management, general administration, and other support functions performed jointly for which the amounts pertaining to specific fires cannot be determined accurately. These costs also are incurred for the benefit of more than one subactivity or fire, and in amounts too small to be reported on time and attendance reports or other financial documents that obligate monies. The indirect cost rate (3%) should be added to the Service's direct amount being billed.

4.2.6. COST DATABASE

The Service's Finance Center issues a monthly Project Obligation Transaction Report (POTR) that displays the costs associated with fire incidents. Correct costing to these fire codes is the responsibility of the organization. If costs are not coded to the correct fire code, it will be nearly impossible to determine the exact cost of a particular fire.

- Costs associated with aircraft services must be obligated/paid before these will be reflected in the POTR.
- Payroll costs will be recorded in the month during which the actual payday falls.
- Emergency Fire Fighter payroll will not be recorded until the certified schedule reaches the Service's Payroll Office (Bureau of Reclamation), Denver, Colorado.

4.2.7. OTHER RELATED DIRECT COSTS

Costs incurred by third parties such as State organizations, rural fire districts, protection associations, and other Federal or State organizations must be compiled accurately for billings and recovery from the party or parties responsible for the fire. These costs will not appear on the Suppression Cost Report, and must be added. Use of a form such as the Firefighting Cost Report is suggested (see Illustration 3, III-E).

This page was last modified 01/07/03

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U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Case File\]](#) [\[Register\]](#) [\[Case Preparation\]](#) [\[Notification\]](#) [\[Billing\]](#) [\[Settlement\]](#) [\[Litigation\]](#) [\[Closeout\]](#)



4.3 CIVIL CASE PROCEDURES AND BILLING

4.3.1. FIRE TRESPASS CASE FILE

All information regarding the fire case should be included in the case file. Included in the case file are the fire investigation case report, photos, newspaper clippings, cost report documents, and any correspondence. It should be organized in a logical manner and kept in chronological order. Each case should be treated as if it will go into litigation.

4.3.2. TRESPASS REGISTER

The case should be assigned a trespass case number from the regular Document Control Register log.

4.3.3. CASE PREPARATION

Back-up documentation for court litigations can be tremendous and in many cases, originals of everything are required, i.e., T&As, invoices, etc. Once the fire investigation case report has been completed and the case folder is in order, there are several options to be considered in recovering costs associated with a trespass fire:

- If it is apparent that collection of the costs will be uncontested, the refuge should generate a Bill for Collection form, DI-1040 (revised August 1973) (see Illustration 2, III-3). This action does not eliminate the use of the judicial systems, if necessary. It is important, however, that the criminal case is resolved before pursuing civil remedies. It always strengthens the civil case if any kind of criminal judgment is passed against the responsible party. This can be a grand jury indictment up to and including an arson conviction. Each case should be treated as if it will go into litigation.
- In most cases the Service is under proprietary jurisdiction, and the option exists to either use the State court system or the Federal judicial system to pursue collection of fire costs. The option to pursue a State court remedy is not available in those cases where the Service holds exclusive jurisdiction. Each case should be reviewed to see which system will be most effective. Often, State laws are more appropriate when dealing with negligent type offenses, such as reckless burning. These factors, along with applicable State and Federal laws, should be considered when deciding what avenue to pursue. If the facts and evidence of the investigation are insufficient to show probable cause or the starting of the fire was clearly accidental and without intent or negligence, then cases should be collected through a billing or demand letter process. If this administrative procedure fails to obtain a full settlement, then it may be necessary to file a civil suit against the person in U.S. District Court. This is normally done through the Solicitor with the advice and consent of the U.S. Attorney.

4.3.4. TRESPASS NOTIFICATION

Personal contact should be made, if possible, with the responsible party before a Bill for Collection is sent. A [cover letter](#) should accompany each bill. The cover letter should contain information such

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Case File](#)

[Register](#)

[Case Preparation](#)

[Notification](#)

[Billing](#)

[Settlement](#)
[Litigation](#)
[Closeout](#)
[Criminal Cases](#)
[Glossary](#)
[References](#)

[Rehabilitation](#)

as the fire date, location, and cause of fire. It should list why the individual is the responsible party and is receiving a bill. It should also outline procedures and due dates for payment.

4.3.5. TRESPASS BILLING

All Bills for Collection must be combined with the cover letter and a supplemental sheet that itemizes a breakdown of costs (retardant, etc). Once a bill has been issued (see Illustration 3, III-E). All Bills for Collection must be sent by certified mail, return receipt requested.

The [Bill for Collection form, DI-1040](#), is used by all field stations to notify individuals or companies of outstanding debts owed the Service. One copy (pink) of the completed form is to be submitted in a blue envelope to the Service Finance Center, Cost Accounting Section, promptly upon issuance by field stations.

The Service Finance Center will be responsible for any subsequent notices to the customer. A copy of all ensuing notices will be furnished to the appropriate organization. Instructions for preparing a Bill for Collection are as follows:

- The "Bill Number" will consist of 10 numbers, with the first 5 digits being the organization code, the sixth digit being the fiscal year, the seventh digit being a "C," and the last 3 digits corresponding to your sequential document numbering system. Numbers can be obtained either from the regular Document Control Register log or a Collection Control Register log maintained at the Regional/field office. Example: Bill Number 61520-4-C001
- The "Remit To" portion will be the Service's lockbox. U.S. Fish and Wildlife Service, Finance Center, P.O. Box 840114, Dallas, Texas 75284-0114.
- The "Date" is the billing date. With the "Description," a due date will be placed which is 30 days from the billing date. NOTE: The first overdue notice will be sent out 32 days from the date the Finance Center loads the bill into FFS. The bill will be loaded within 1 work day of receipt. The 32-day period allows for interest and administrative charges to be assessed prior to the overdue notice being generated.
- "Payer" is the name and address of the individual or company billed.
- In the "Description," furnish a detailed explanation of the materials/services performed for the payer. In addition, the statement which follows must appear on all DI-1040s: NOTE: Full payment is due within 30 days after the above billing date. Prompt remittance is required to avoid the interest, administrative, and penalty charges on delinquent debts. The interest rate applicable to this bill is _____%, in addition to the \$_____ administrative charge per each delinquent notice. In order for your account to be properly credited, please include a copy of this bill with your payment. If you have any questions regarding this bill, please contact _____.
- Accounts more than 120 days overdue will be assessed a 6 percent penalty.
 - The interest rate applicable for inclusion into the above statement is determined by the Department of Treasury. As this percent changes, notification will be provided through subsequent FFS Bulletins. The current rate for Calendar Year 97 is 5 percent. The current administrative charge, determined periodically as the Service's cost of follow-up notices, is \$8. Penalties are charged in accordance with the Debt Collection Act of 1982.
 - In addition, provide the payer with the name of a contact who is knowledgeable about the specific nature of the issued bill.
- Fill in the "Amount Due This Bill."
- Provide all pertinent information necessary to properly classify the funds. This includes organization, subactivity, project, and fiscal year to which the billing is applied. Upon remittance, the Service Finance Center will apply the collection to the billing document number. The originating organization will be responsible for sending any confirmation of receipt of payment to the payer. The Finance Center must be notified any time the amount of the bill is going to be modified (upward or downward), and also "cc" the Finance Center with any correspondence regarding the billing. This documentation is required in the files if the bill has to be referred elsewhere.

4.3.6. LESS THAN FULL SETTLEMENT

If at any time it appears that less than full payment may be negotiated, the Regional Solicitor (Solicitor) will be involved. A complete case file should be submitted to the Regional Office with a memo recommending the case be forwarded to the Solicitor. The Solicitor acts upon recommendations by the Refuge and Regional Offices regarding compromised settlements. The receiving office will apply monies received to the bill using established collection procedures. At the same time, the difference between the original bill amount and compromise amount will be written off as uncollectible.

4.3.7. LITIGATION

Each case should be handled as if it will ultimately end up in litigation. Careful attention should be paid to following proper investigation and reporting techniques. Since wildland fire cases are relatively new to the judicial community, it may be necessary to spend some time familiarizing the attorneys with char patterns and burn indicators, as well as general fire terminology. It is well worth the effort to establish a rapport with these individuals.

Once the case is received and put into the judicial system, the attorneys will be in control of the case. However, they will still work closely with Service personnel when additional information or recommendations are needed.

4.3.8. CASE FOLLOW-UP AND CLOSEOUT

Not every case will come to a hasty conclusion. There are statutes of limitations from the fire date to when action must be taken to identify the responsible party and prosecute or pursue collection. Cases should be considered active until termination for cause or the statute of limitations has expired.

Closeout of a case should include notification of the Regional Office, the appropriate Refuge Manager, and any outside agencies involved. It should include letters to key witnesses and notification to the news media.

[Exhibit 4-3-1: Sample Billing Cover Letter](#)

[Exhibit 4-3-2: Sample Bill for Collection](#)

[Exhibit 4-3-3: Sample Firefighting Cost Report](#)

This page was last modified 01/07/03

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Exhibit 4-3-1: Billing Cover Letter

BILLING COVER LETTER
(Fish and Wildlife Service Letterhead)

[Back](#)

FILE CODE

DATE

CERTIFIED MAIL NO.

RETURN RECEIPT REQUESTED

John Doe
Main Street
USA

RE: Oakbrook Fire No. 445

Dear Mr. Doe:

On July 9, 1997, a fire known as the Oakbrook Fire on the lower Deschutes River was reported to Fish and Wildlife Service Dispatch in Prineville. The fire occurred in Wasco and Sherman Counties in the Gordon Canyon area.

An investigation of the fire indicated you were responsible for the ignition. We have enclosed a bill for our suppression costs of \$_____. Also included are itemized accounts of the costs. Your check should be made payable to:

U.S. Fish and Wildlife Service
P.O. Box 840114
Dallas, Texas 75284-0114

If you have any questions regarding this matter, please contact Roy Hogue at 447-4115.

Sincerely,

James L.
Hancock
Refuge
Manager

Enclosure


[Back](#)

Exhibit 4-3-2: BILL FOR COLLECTION

DI.1040 Revised (Aug. 1973)	BILL FOR COLLECTION	Bill No. <u>61520-2-C001 (1)</u>		
Make Remittance Payable to: <u>U.S. Fish and Wildlife Service Finance Center</u> Date: _____ (Bureau or Office)				
Mail Payment To: <u>(2) P.O. Box 272060, Denver, CO 80227</u> (Address)				
PAYER: (BILLEE)		Please detach top portion of this bill and return with remittance. Amount of Payment \$		
Date	DESCRIPTION	Quantity	Unit Price	Amount
	Fire Suppression Costs for Fire #XXXX			\$ 521.00
	Rehabilitation Costs			\$ 100.00
	Administrative Costs			\$ 111.78
	Mutual Aid Costs			\$ 3,850.00
NOTE: Full payment is due within 30 days after the above billing date. Prompt remittance is required to avoid the interest, administrative, and penalty charges on delinquent debts. The interest rate applicable to this bill is _____% in addition to the \$ _____ administrative charge per each delinquent notice. In order for your account to be properly credited, please include a copy of this bill with your payment.				
IF YOU HAVE ANY QUESTIONS REGARDING THIS BILL, PLEASE CONTACT _____				
AMOUNT DUE THIS BILL.				<u>\$ 4,582.78</u>

NOTE: A receipt will be issued for all cash remittances and for all other remittances when required by applicable procedures. Failure to receive a receipt for cash payment should be promptly reported to the bureau or office shown above.



Exhibit 4-3-3: FIREFIGHTING COST REPORT

FIREFIGHTING COST REPORT

[Back](#)
REFUGE Florida Panther DATE May 25, 1997FIRE NAME No Name FIRE NO. 2221 DATE OF FIRE May 5, 1997PREPARED BY Steve PHONE 234-1234 APPROVED BY BenREFUGE SUPPRESSION COSTS (from Suppression Cost Report)

Personnel	\$ 400.00	
Sub Total Personnel:		\$ 400.00
Equipment		
200 gal. engine	\$ 121.00	
800 gal. engine		
Heavy Equipment		
Sub Total Equipment:		\$ 121.00
Aviation Costs:		
Helicopter Rental		
Support Vehicle		
Sub Total Aviation:		
Repair Costs:		
Sub Total Repair:		

Meals:			
Sub Total Meals:			
Administrative Services	18%		
Sub Total Admin:			\$ 111.78
Rehabilitation Costs		\$ 100.00	
Sub Total Rehab:			\$ 100.00
Mutual Aids Costs	RFD #5	Forest Service	
Personnel	\$ 700.00	\$ 500.00	
Equipment	\$ 500.00		
Equipment Rental			
Retardant		\$ 150.00	
Other		\$ 2000.00	
Travel			
Sub Total Mutual Aid:	\$ 1200.00	\$ 2650.00	\$ 3850.00
TOTAL:			\$ 4582.78



U.S. Fish & Wildlife Service

Fire Management Handbook

[\[Misdemeanors\]](#) [\[Felonies\]](#) [\[Prosecution\]](#)



4.4 CRIMINAL CASE PROCEDURES

If the facts and evidence in the investigation indicate possible criminal intent, a law enforcement officer should be contacted to determine if sufficient probable cause exists to seek prosecution. Upon determination of probable cause, criminal prosecution may be initiated.

4.4.1. MISDEMEANORS

Misdemeanors of a less serious nature may be handled administratively by oral and/or written warnings. This is normally done when there is a technical violation of the law (misdemeanor), but under the circumstances, the violation appears to have occurred inadvertently or through ignorance of the law. Remember that the law requires us to prove willful neglect under Section 303 of the Federal Land Policy and Management Act. Either a Service resource or law enforcement personnel can issue a warning.

- More serious misdemeanor violations are to be treated by the violation notice that calls for mandatory appearance before a U.S. Magistrate or by forfeiture of collateral in accordance with a bail schedule. Only delegated Law Enforcement Officers are authorized to issue violation notices.
- The option of filing a criminal complaint with the U.S. Attorney's office instead of a violation notice is an option of the Law Enforcement Officer, depending on circumstances and gravity of the violation.
- As in all law enforcement actions, appropriate line officials should be kept informed of the law enforcement actions taken.
- After appropriate administrative measures have been completed, the case should be closed with the closeout disposition form.

4.4.2. FELONIES

In most cases, a felony committed in the presence of a Law Enforcement Officer should be dealt with by making an arrest. Some circumstances might merit serving an arrest warrant when more assistance is available, e.g., other refuge officers, special agents, local law enforcement, etc.

- Where an actual physical arrest was not made, a criminal complaint becomes the necessary document to bring the violator into custody.
 - An affidavit clearly spelling out the crime and the probable cause to arrest is then reviewed by a judge.
 - When an arrest is made with or without an arrest warrant, a thorough search of the suspect is to be performed to ensure the safety of the officer, the suspect, and other persons.
- Only delegated Law Enforcement Officers are authorized to make arrests.

4.4.3. CHANNEL FOR PROSECUTION

U.S. Attorneys prosecute all Federal laws, but will many times allow District Attorneys at the county level to handle particular cases. Many times, District Attorneys will prosecute cases when there is a corresponding State statute.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Misdemeanors](#)

[Felonies](#)

[Prosecution](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

- A clear policy and understanding should be obtained from the U.S. Attorney's office and individual District Attorneys to ensure appropriate procedures
- Law Enforcement Officers will coordinate criminal cases with appropriate prosecutors.
- The Service policy regarding news releases relative to criminal investigations or charges should be coordinated between Service Public Affairs personnel and the Office of the U.S. Attorney with regard to Federal cases, and the local prosecutor for State law violations. Normally, a press release is proper only after charges have been filed with the court and/or the defendant has made an initial appearance before the court system. These guidelines can vary, and should be formulated according to local rules.

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[Back](#)



U.S. Fish & Wildlife Service

Fire Management Handbook

4.5 TRESPASS GLOSSARY OF TERMS



Civil case: A civil case involves a trespass or civil wrong against a person or corporation. A civil case can be proven upon a preponderance of evidence, whereas a crime must be "proven beyond a reasonable doubt."

Chain of custody: The steps an officer takes to ensure evidence is not "tainted" constitute the chain of custody. All persons handling the evidence must be able to show the evidence was not tampered with, and was in a secure location at all times prior to being introduced into court action.

Criminal case: A criminal case involves a felony or a misdemeanor crime. A crime is a positive or negative act in violation of treaties, statutes, and regulations pursuant to statutes. A criminal case must prove the elements of the crime charged.

Criminal complaint: There are two types of criminal complaints - misdemeanor and felony. The complaint charges a person or persons with a particular crime. It involves the use of witnesses and confidential informants, evidentiary material, and shows "probable cause." Probable cause is needed in the complaint to show the legal reasons why a person is charged with a crime.

Evidence: Evidence has been defined as all the means by which any alleged matter of fact is established or disproved. It includes testimony, records, documents, objects, etc., that can be legally presented at a trial for the purpose of inducing a belief in the minds of the court and jury as to the truth of the issue involved.

Federal prosecution: After a citation, criminal complaint, or arrest is made by an officer, the case is written up as an official criminal report for review by an Assistant U.S. Attorney. When the case warrants court action, the Assistant U.S. Attorney introduces the complaint to the court. The defendant is then brought before the court for his initial appearance. At that time, the judge will set a court date involving a court trial or trial by jury, or set sentencing if the defendant pleads guilty.

Felony: Any offense punishable by death or imprisonment for a term exceeding 1 year is a felony. An example of a felony would be 18 U.S.C. 1855, Wildlands Arson. This felony is punishable by a fine of \$5,000 or imprisonment of not more than 5 years, or both.

Fire investigation: Examination of all the circumstances of the growth and extension of a fire. This includes determination of the point of origin and the specific cause of a fire. If the fire is person-caused, the investigation includes the location of the responsible parties and the pursuit of cost recovery.

Fire origin: The primary purpose of a fire investigation is to determine what caused the fire, and whether it was started by a natural ignition source (lightning) or person-caused. In most fires, the first step is to determine where the fire originated. Determining the origin narrows the search for and frequently pinpoints what caused the fire.

Fire suppression: All work activities connected with fire extinguishing operations, beginning with discovery and continuing until the fire is completely out.

Incident Commander: The officer in charge of the overall management of the incident.

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

Rehabilitation

Initial attack forces: The first people assigned to a wildland fire incident.

Initial Attack Incident Commander: The Incident Commander at the time the first attack forces commence suppression work on the fire.

Law Enforcement Officer: The Service has two types of Law Enforcement Officers.

- Special Agent: A criminal investigator of the Service who is qualified, trained, and delegated authority by the Director to enforce applicable laws and regulations by conducting criminal investigations.
- Refuge Officers: An employee of the Service who is qualified, trained, uniformed, and who is delegated authority by the Director to enforce applicable laws and regulations for the protection of resources.

Litigation: Any time a case has been referred to a Solicitor or prosecuting attorney for consideration, it is said to be in litigation until conclusion of the case.

Misdemeanor: An offense less than a felony. A misdemeanor involves a monetary fine and/or imprisonment not exceeding 1 year. An example would be 18 U.S.C. 1856, Fires Left Unattended and Unextinguished. This misdemeanor is punishable by a fine not to exceed \$500.00 and/or imprisonment of not more than 6 months.

State prosecution: Crimes are prosecuted in a similar manner at the State level as at the Federal level.

Witness: Witnesses are persons who, through their senses, have knowledge of an act. Witnesses have information that can be used in legal proceedings. The courts may require that witnesses testify to first-hand information.

This page was last modified 01/07/03

[\[Disclaimer\]](#) | [\[Privacy\]](#) | [\[Copyright\]](#) | [\[USFWS Main Page\]](#) | [\[Webmaster\]](#)



U.S. Fish & Wildlife Service

Fire Management Handbook



TRESPASS REFERENCES

[NWCG Handbook 1, Wildfire Cause Determination Handbook](#), National Wildfire Coordinating Group, February 1978

[Power Line Fire Prevention Field Guide](#), California Department of Forestry, 1977

[Industrial Operations Fire Prevention Field Guide](#), California Department of Forestry, 1980

[Railroad Fire Prevention Field Guide](#), California Department of Forestry, 1978

[Fire Safe Guides for Residential Areas](#), California Department of Forestry, 1980

[Cigarette Butt Identification Aid](#), Oregon State Department of Forestry

[Fire Investigation Handbook](#), Department of Commerce, National Bureau of Standards

[A Guide to Natural Cover Wildfire, Fire Direction Indicators](#), Oregon State Department of Forestry

[Fire Cause Determination](#), International Fire Service Training Association

[Fire and Arson Photography](#), Eastman Kodak Company, Publication M-67

[Burn Pattern](#), Oregon State Department of Forestry

[Initial Observations Course](#), California Department of Forestry

Local State Ordinances

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)

This page was last modified 01/07/03

[|Disclaimer|](#) | [Privacy](#) | [Copyright|](#) | [USFWS Main Page](#) | [Webmaster|](#)



U.S. Fish & Wildlife Service

Fire Management Handbook



CHAPTER 5. BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION Revised 9/15/03

Responding to the GAO report entitled [Better Information Needed on Effectiveness of Emergency Stabilization and Rehabilitation Treatments](#), the Wildland Fire Leadership Council established [directives](#) for the Department of the Interior and the U.S. Forest Service. On May 5, 2003 the Department of the Interior issued [new departmental policy](#) which should be incorporated into 620 DM 3 by October 1, 2003. The significant policy changes include:

- The creation of separate funding structures and plan requirements.
 - Emergency stabilization (with the Secretaries' emergency borrowing authority)
 - Rehabilitation (without the Secretaries' emergency borrowing authority).
- Limiting emergency stabilization treatment funding to 1 year following control of the fire.
- A Burned Area Emergency Response (emergency stabilization) plan development deadline of 7 days following total containment of the fire.
- Establishing a priority system for funding rehabilitation activities and treatments.
- Stricter reporting and accountability requirements.

The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook is being revised and should be available at the end of the calendar year. The following emergency stabilization and rehabilitation standards and plan templates should be helpful until the Handbook is completed.

- [Emergency Stabilization Standards](#)
- [Rehabilitation Standards](#)
- [Plan Templates](#)

Department and Service burned area emergency stabilization and rehabilitation policy is found in [620 DM 3](#) and [095 FW 3.9](#), respectively. Updates incorporating Wildland Fire Leadership Council actions and Department of the Interior policy changes have been drafted and are being reviewed.

Roles, Responsibilities and Accountability

Because plan preparation, review, approval, and implementation requires immediate action and spans multiple program responsibilities and disciplines, [the Director provided additional accountability guidance](#) which is summarized below:

- Plan preparation - Refuge Manager
- Plan review
 - Compatibility and compliance review - Refuge Manager
 - Fiscal review - Regional Fire Management Coordinator
- Plan approval
 - < \$500,000 - Regional Director
 - > \$500,000 - Chief, National Wildlife Refuge System
- Plan implementation - Refuge Manager
- Plan implementation oversight - Refuge Supervisor

[Home](#)

[What's New](#)

[Preparedness](#)

[Program Mgt.](#)

[FIREBASE](#)

[Prevention](#)

[Planning](#)

[Qualifications](#)

[Financial Mgt.](#)

[Info. Systems](#)

[Records & Reports](#)

[Prescribed Fire](#)

[Introduction](#)

[Operations](#)

[Smoke Mgt.](#)

[Wildland Fire](#)

[Preparedness](#)

[Operations](#)

[Fire Use](#)

[WFSA](#)

[Business Mgt.](#)

[Reviews](#)

[Fire Trespass](#)

[Investigations](#)

[Cost Determinations](#)

[Civil Cases](#)

[Criminal Cases](#)

[Glossary](#)

[References](#)

[Rehabilitation](#)



Budget tracking and accountability - Fire Management Branch Chief

Funding Guidance

Emergency stabilization ([subactivity 9142](#)) and rehabilitation ([subactivity 9262](#)) funding guidance should be referenced when developing and implementing a Burned Area Emergency Response (emergency stabilization) and/or Rehabilitation Plan.

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United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

MAY - 5 2003

Memorandum

To: Deputy Commissioner for Indian Affairs
Director, Bureau of Land Management
Director, National Park Service
Director, Fish and Wildlife Service

From: Assistant Secretary - Policy, Management and Budget *P25*

Subject: Wildland Fire Emergency Stabilization and Rehabilitation Policy and Procedures

The wildland fire emergency stabilization and rehabilitation (ESR) policy has undergone changes in the last several years. This memorandum supercedes established policy and establishes interim policy and procedures for wildland fire ESR until a new 620 Departmental Manual (DM) Chapter 3 is issued. This memorandum also provides direction for rewriting the DM, funding of wildland fire ESR projects for the remainder of FY 2003, and provides changes to the funding and documentation of projects in FY 2004.

The magnitude of FY 2002 ESR requests has forced a change in the way projects are approved, see memorandum from Assistant Secretary, Policy Management and Budget (A/S PMB) dated November 6, 2002, attachment 1.

The funding of FY 2003 ESR projects will continue to be from the Wildland Fire Management Appropriation. It should be noted that these funds are no-year funds and may carryover into future years.

The National Burned Area Emergency Stabilization and Rehabilitation Coordinators (National Coordinators) are charged with drafting policy changes to the 620 Departmental Manual Chapter 3, Emergency Stabilization and Rehabilitation. The draft DM is due by September 30, 2003. The National Coordinators are to use the Wildland Fire Leadership Council (WFLC) paper, *BAER/ESR Funding Process* (attachment 2), recommendations from the A/S PMB November 6, 2002 memorandum and the GAO report, *Wildland Fires: Better Information Needed on Effectiveness of Emergency Stabilization and Rehabilitation Treatments* as their direction for policy development, revisions to definitions, establishment of common project selection criteria, and implementation guidance for the program. The National Coordinators will also finalize the BAER Handbook by December 30, 2003 for DOI use in FY 2004.

Below is a description of program transition and policy decisions for the remainder of FY 2003 and FY 2004, until the DM is finalized.

Funding of FY 2003 Projects and Treatments:

All ESR projects and treatments will be funded based on the funding criteria established in the A/S PMB November 6, 2002 memorandum, or as revised by the National Coordinators and approved by the Office of Wildland Fire Coordination (OWFC) to improve program delivery.

All ESR projects and treatments that were postponed based on the criteria from the November 6th memorandum will be funded only if and when funding is made available. Selection for funding of these ESR projects or treatments will be based on the current established Departmental criteria at the time.

If project or treatment funding requests exceed available funding, the National Coordinators will evaluate the requests and set funding priorities by project or treatment in consultation with the OWFC.

All funding approvals for new ESR projects or treatments for the remainder of this fiscal year will be approved by the National Coordinators of each bureau in coordination with the OWFC. Supplemental funds will be apportioned among the bureaus based on expected needs, as identified by the National Coordinators at the time such funds become available.

All field or region/state approvals for new or revised funding are rescinded at this time. Bureaus should continue to approve plans, excluding funding, for potential implementation.

By September 30, 2003, each bureau is to close out all 2000 and prior year ESR plans to make any unobligated funds available for high priority projects.

If funding remains limited, no capitalized equipment may be purchased by the ESR account without the approval of the National Coordinators.

If funding remains limited, no law enforcement or other support actions, beyond life-threatening situations, will be funded by the ESR account for the remainder of this fiscal year.

Funding of FY 2004 Projects and Treatments:

In order to comply with the direction given by the WFLC, the financial tracking of emergency stabilization and rehabilitation treatments must be done independently of each other. The tracking of expenditures for the two subactivities will begin October 1, 2003 (FY 2004). Starting in FY 2004, emergency stabilization treatments, including those approved but not completed in FY 2003, will be funded from a new subactivity called Emergency Stabilization within a new Emergency Operations (formerly Wildland Fire

Suppression) budget activity. This new subactivity, Emergency Stabilization, will need to be created in each bureau's financial system. Rehabilitation treatments, including those approved but not completed in FY 2003, may be funded, based on availability of funds, by the Burned Area Rehabilitation subactivity which will be within the Other Operations budget activity.

Beginning in FY 2004, past approved projects or treatments will be funded only when consistent with new Departmental policy, including common selection criteria and plan format, and entry into National Wildland Fire Operational Reporting System (NFPORS).

Guidelines for the FY 2004 Emergency Stabilization Program:

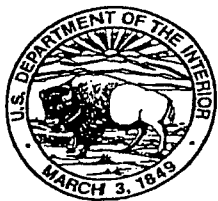
All funds approved for emergency stabilization projects or treatments will be expended within 365 days from the control date of the fire. Consideration of additional funding for unsuccessful stabilization projects or treatments beyond the first year, requires an approved written project plan, including monitoring documentation, and entry into the NFPORS rehabilitation module prior to funding approval. Emergency stabilization funding may be used to repair or replace failed structures or treatments for up to three years from the date of fire control where failure to do so would imperil watershed functionality or result in serious loss of downstream values. However, emergency stabilization funding cannot be used to continue seeding, planting and invasive plant treatments beyond one year.

Guidelines for the FY 2004 Rehabilitation Program:

All rehabilitation projects or treatments will be funded on a priority basis as established by the National Coordinators in consultation with OWFC. Funding will be prioritized using common criteria. All projects or treatments will be reviewed at the end of the fiscal year and funded with the next fiscal year's funds. The National Coordinators will establish and use common selection criteria to create a priority listing of projects or treatments. Rehabilitation projects or treatments may be planned for up to three years. Funding of planned projects or treatments will be in one year increments. Each approved project or treatment will have monitoring conducted as established in the plan. All funds will be expended in the fiscal year in which the project or treatment is approved. Any funding not expended within that time frame will be returned to the subactivity for redistribution based on new project or treatment priorities in the following year. All rehabilitation projects or treatments must be entered into NFPORS prior to funding approval. Future year funding of projects or treatments must be resubmitted for funding approval. Any rehabilitation project or treatment for years 2 or 3 without written monitoring documentation will not be funded.

Guidelines for the FY 2004 Support Funding:

Beginning October 1, 2003 new equipment, equipment or supply rental, repair or use rate charges that are for specific ESR approved uses may be funded from the benefitting emergency stabilization or rehabilitation subactivity. Training, workshops and support travel may also be funded from the benefitting subactivity.



United States Department of the Interior
Office of Policy, Management and Budget
Washington, D.C. 20240

NOV - 6 2002

Memorandum

To: Director, Bureau of Land Management
Director, Fish and Wildlife Service
Director, National Park Service
Deputy Commissioner, Bureau of Indian Affairs

From: P. Lynn Scarlett, Assistant Secretary - Policy, Management and Budget

Subject: Emergency Stabilization and Rehabilitation Funding
Action due: November 20, 2002

The \$20 million provided in both the House and Senate Interior appropriations bills for the Emergency Stabilization and Rehabilitation (ESR) subactivity of the Wildland Fire Management account for FY2003 is significantly less than recent appropriations. The Department must change its business practices in response to the reduced funding level. The ESR program is not currently able to meet all the objectives set forth in the Departmental Manual (620 DM 3, Burned Area Emergency Stabilization and Rehabilitation).

The proposed funding level plus carryover from 2002 will provide the ESR program with almost \$35 million in FY 2003. Proposed ESR funding requests for fires that occurred from 2000 through 2002 are estimated to be in the \$35 million to \$40 million range. Emergency stabilization and rehabilitation costs for fires that will occur in the coming year will add to the funding requirement.

A conference call was held on October 15, 2002 with your bureau ESR and fire budget managers to determine a course of action for this fiscal year. The following decisions were made during the conference call.

- Criteria were established for ranking projects and treatments to determine which ones can be funded this fiscal year. The criteria follow.
 1. Required Health and Safety Treatments
 - A. Health and safety (imminent danger, immediate threat to life)
 - B. Health and safety (imminent danger, immediate threat to property)
 - C. Municipal water source loss of capacity

2. Resource Protection Treatments
 - A. Threatened and endangered species habitat treatments (not enhancements)
 - B. Cultural heritage treatments to prevent further erosion of site (not inventory or mitigation of the site)
 - C. Treatments to prevent invasive plant establishment
 - D. Resource protection treatments (site stabilization of soil)
3. Other Rehabilitation Treatments from 2000, 2001 or 2002

- Each bureau must evaluate each of its project plans to determine if the plan, or any portion of the plan, can be funded at this time. Review of all plans must be completed by November 20, 2002.
- Current and proposed ESR plans can only be implemented if they meet the criteria and if funds are available. However, contracts that have been awarded as of the date of this memorandum may continue.
- Funding for implementing fiscal year 2000, 2001, or 2002 ESR plans must be deferred until the plans are rated against the ESR criteria.
- Each bureau is to close out all 1999 and prior fiscal year ESR plans to make any unobligated funds available for high priority projects in FY 2003.
- As of the date of this memorandum, all project approvals will be restricted to the state/regional or national level offices. State/regional offices must receive approval of funding availability prior to committing and approving any project plans.
- Only those projects or treatments that meet the criteria #1 or #2 for 2002, 2001, or 2000 fires may be funded immediately.
- Projects or treatments that do not meet the criteria #1 or #2, will be funded as a second priority only if funding is available.
- If additional funding is obtained, criteria will be established to fund any outstanding project plans or treatments.
- A sum of up to \$5 million will be held in reserve to fund future plans.
- No equipment will be purchased by the ESR account without the approval of the ESR national bureau coordinators.
- No law enforcement or other support assistance actions beyond life-threatening situations will be funded.

If you have any questions concerning this topic please contact Wally Josephson, Office of Wildland Fire Coordination on 202-606-3053.



Wildland Fire Leadership Council

National Fire Plan

January 13, 2002

Topic: BAER/ESR Funding Process

Issue: The DOI and USDA FS have the same definitions and timeframe requirements at the Department level for emergency stabilization and rehabilitation (ESR/BAER) of burned areas but differing funding mechanisms.

Background: In the OMB FY04 budget pass back, OMB expressed concern with the broad definition of emergency stabilization and the potential for funding non-emergency items out of the emergency account. They directed DOI to identify options for remedying this problem by March 3, 2003.

In subsequent discussions, OMB stated that:

- only emergency stabilization (ES) actions should be funded from emergency wildland fire suppression accounts.
- it favored limiting ES to the immediate post-fire period (i.e. about 1 year)
- rehabilitation actions should be charged to either non-emergency, non-suppression, fire accounts or non-fire accounts.
- ES costs should be tracked separately from suppression costs within the emergency account.
- the Secretaries' emergency budget transfer authority for wildland fire should be used only for suppression and ES, not rehabilitation.
- rehabilitation should be limited to about 3 years.
- Agriculture and Interior should agree on definitions and timeframes for ES and rehabilitation.

GAO conducted an audit of the Departments' ESR/BAER programs in 2002 and their findings will be published in early 2003. They do not plan to address the funding issue in their report.

In 1999, both Departments developed and agreed to the current ESR/BAER policy. The DOI adopted the ESR policy in 2000, revised its manual and developed the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook. The USDA FS planned to update its manual and handbook to reflect the policy change, but this work has not been completed. This, in part, has contributed to the inconsistencies between the Departments in implementing these programs.

Inherent in eliminating inconsistencies in funding, is the adoption of standard definitions and timeframes for ESR/BAER work. While recent negotiations have reconciled the definitions and timeframes at the Department level, manuals do not reflect the new direction. The standardized definitions and timeframes are enclosed as part of this document.

Key Points:

FS:

- 1) Burned Area Emergency Rehabilitation (BAER) is funded out of suppression funds associated with the fire incident but is tracked separately from suppression costs.
- 2) BAER work is directed toward emergency stabilization that focuses on the first year following the fire incident.
- 3) Other work can be associated with emergency stabilization if conditions warrant. The most common treatment beyond the first year that can be approved and funded from emergency funds is work associated with noxious and/or invasive species treatments, which may last up to three years from the initial treatment.

- 4) Monitoring can be approved and funded from emergency funds on an annual basis for up to three years.
- 5) Other types of rehabilitation and restoration work, such as replacement of permanent infrastructure and silvicultural treatments, are funded from normal operational funding and/or National Fire Plan funding.

DOI:

- 1) Emergency Stabilization and Rehabilitation (ESR) is funded from the Wildland Fire Operations Account, separately from suppression.
- 2) Emergency stabilization actions are basically the same as FS BAER activities, except DOI allows these to continue up to 2 growing seasons post-fire. ES may include efforts to reestablish native species or minimize the establishment of non-native species only where immediate action is required.
- 3) Rehabilitation, which consists of long-term efforts to repair or improve lands unlikely to recover naturally from wildland fire damage, or to repair or replace minor fire-damaged facilities, is funded up to 3 years post-fire. This frequently involves efforts to control noxious and/or invasive species.
- 4) Monitoring can be approved on an annual basis for up to three years.
- 5) Restoration work, e.g. replacement of major facilities, and efforts to improve ecosystems beyond three years are funded from non-fire operating accounts. National Fire Plan funding cannot be used (DOI does not distinguish between normal wildland fire funding and national fire plan funding).
- 6) Addresses OMB concerns # 4 and # 6.

Advantages of both Departments adopting the FS funding rules for BAER:

1. Shortens the timeframe of completing emergency stabilization to prevent unacceptable loss of soil productivity and sedimentation of streams and lakes.
2. Easier to defend treatments as a response to *emergency* conditions.
3. Reduces the need for environmental analysis since emergency stabilization is associated with suppression activities.
4. Complies with the NEPA requirements and other applicable laws for environmental analysis for rehabilitation and restoration activities.
5. Eliminates inconsistencies and confusion in the budget process, and in implementing interagency BAER activities.
6. Addresses OMB concerns #1, 2, 3, 5, and 7 above.

Advantages of both Departments adopting the DOI funding rules for BAER:

1. BAER/ESR funding process the same for both programs.
2. 2 growing season time limit on ES would provide managers more time to conduct thorough post-fire damage assessments prior to initiating mitigation treatments
3. Provides more flexibility to use wildland fire funds to initiate rehabilitation treatments until non-fire funds can be secured.
4. Helps to restore healthy ecosystems by aggressively combating noxious, invasive species within the first 3 years post-fire.
5. Eliminates inconsistencies and confusion in the budget process, and in implementing interagency BAER activities.

Recommendation:

Adopt the following interagency policy for ESR/BAER treatments:

1. Limit initial treatment ES to 1 year post-fire.
2. Monitor, using emergency funds, the effectiveness of ES treatments for 3 years post-fire.

3. Repair or replace ES structures or other treatments for 3 years post-fire (e.g. check dams, trash racks, sediment catch basins, and other erosion control treatments) where failure to do so would imperil watershed functionality or result in serious loss of downstream values.
4. Fund ES and monitoring from an emergency ES/BAER account for tracking purposes, not directly from the incident suppression account.
5. Supplement ES funding using the Secretaries' emergency transfer authority for wildland fire if annual appropriations plus carryover funds are insufficient to implement emergency treatments.
6. Fund rehabilitation treatments for up to 3 years post-fire from a non-emergency, non-suppression, wildland fire account.
7. Do not supplement fund rehabilitation treatments using the Secretaries' emergency transfer authority for wildland fire.
8. Adopt the enclosed ESR/BAER definitions and timeframes table dated 8/15/02.

Rationale:

1. Addresses all OMB concerns.
2. Eliminates inconsistencies and confusion in the budget process, and in implementing interagency ESR/BAER activities.
3. ES is still covered under the emergency provisions of NEPA.
4. Complies with the NEPA requirements and other applicable laws for rehabilitation. Treatments would have to be covered under normal EAs and EISs for management plans.
5. Allows both Departments to develop a single, standardized ESR/BAER handbook, training, and field operations guide.
6. Provides sufficient flexibility for managers to initiate limited post-fire ecosystem rehabilitation while eliminating potential abuse of emergency accounts.

Interagency BAER/ESR Program Definitions

8/15/02

Emergency Stabilization	Rehabilitation	Restoration
<p>Planned actions within one year of a wildland fire to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life or property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources</p>	<p>Post-fire efforts (<3 years) to repair or improve lands unlikely to recover to a management approved condition from wildland fire damage, or to repair or replace minor facilities damaged by fire</p>	<p>The continuation of rehabilitation beyond the initial three years of rehabilitation funding or the repair or replacement of major facilities damaged by the fire. Restoration is funded using appropriated or supplemental funding (for DOI from other than the wildland fire appropriation).</p>
<ul style="list-style-type: none"> *Seeding/mulching to prevent erosion. *Seeding to prevent permanent impairment of critical habitat for Federal and state listed, proposed or candidate threatened and endangered species. *Seeding to prevent establishment of invasive plants. *Direct treatment of invasive plants. *Structural measures to slow soil & water movement. *Stabilize critical heritage resources. *Protective fences or barriers to protect treated or recovering area. *Replacing/repairing (minor) facilities essential to public health and safety. *Conducting assessments of habitat and significant heritage sites in those areas affected by emergency stabilization treatments. *Patrolling, camouflaging, burying significant heritage sites to prevent looting. *Increasing road drainage frequency and/or capacity to handle additional post-fire runoff. 	<ul style="list-style-type: none"> *Tree planting to reestablish burned habitat, reestablish native tree species lost in fire, regenerating Indian trust commercial timberland. *Repair damage to minor facilities (campgrounds, exhibits, fences, guzzlers, etc) *Habitat restoration *Invasive plant treatment *Road/trail maintenance *Heritage site restoration *Fence replacement 	<ul style="list-style-type: none"> *Replacement of major infrastructure (visitor center, residences, administration offices, work centers) burned in the fire. *Watershed restoration

EMERGENCY STABILIZATION STANDARDS

Emergency stabilization actions are intended to protect public safety and stabilize and prevent further degradation to affected natural and cultural resources in accordance with approved land management plans and applicable FWS policy, standards, and all relevant federal, state, and local laws and regulations. Emergency stabilization ([subactivity 9142](#)) funds can only be used for burned area assessments and Burned Area Emergency Response (emergency stabilization) plan development and implementation on FWS lands within the perimeter of the fire or impact area downstream from the burned area. The use of emergency stabilization funding is further limited based on treatment effectiveness and to improve economic efficiencies. The cost of emergency stabilization treatment will be commensurate with values at risk.

Cadastral Survey

Emergency stabilization funding for cadastral survey activities is only provided if the information is needed for plan development and implementation. Project areas have cadastral survey work done with emergency stabilization funds only where land ownership adjacent to proposed emergency stabilization treatments is in question and not to answer long-standing, large-scale ownership questions. Section and quarter corners are located and flagged for avoidance prior to any surface disturbing activity that could result in damage to or destruction of the corner.

Cultural Resources

The objectives of cultural resource activities and treatments funded under emergency stabilization are to stabilize and protect archeological sites, cultural landscapes, traditional cultural properties, cultural values and historic structures from further post fire degradation and assure emergency stabilizations treatments conform to Section 106 of the National Historic Preservation Act.

● Site Stabilization and Protection

It is appropriate to use emergency stabilization funding to determine whether known historic properties in unstable soils are at risk of further resource degradation due to water or wind erosion or looting. Systematic inventories, assessments of the cultural resource damaged caused by the fire, and site recovery are **not** appropriate for emergency stabilization funding.

Incidental discovery of unknown cultural resource sites should be noted. Stabilization treatments of both known and incidentally discovered sites are eligible for emergency stabilization funding.

Patrolling and camouflaging necessary for cultural resource protection is appropriate for emergency stabilization funding. Attention should be given to whether the need is for public awareness contacts or actual law enforcement.

● NHPA Clearance

Emergency stabilization treatments that disturb the soil surface are reviewed for potential effects on significant cultural resources. The appropriate FWS cultural resource specialist should become involved in treatment planning as early as possible to determine if survey, protection measures, and consultation with Native American tribes and other parties are required prior to treatment. This early coordination is especially important.

Efforts are made to address the clearance questions in a timely and cost-effective manner early in plan development. Cultural clearances are covered by emergency stabilization funding.

Treatments evaluated as *No Historic Property* (e.g. no historic properties present), or as actions permitted under an existing FWS programmatic agreement (PA) or memorandum of agreement (MOA) can be undertaken without further State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) consultation. Treatment with *no*

adverse effect can be undertaken after appropriate consultation with SHPO or THPO. Treatments with *adverse effect* should be addressed by the FWS cultural resource coordinator.

Equipment

Capitalized equipment cannot be purchased with emergency stabilization funds unless it can be documented that purchasing equipment is more cost effective than renting equipment and is in the best interest of the government. Capitalized or non-capitalized equipment is not purchased with emergency stabilization funds without review and written approval by the appropriate FWS representative.

Ecological Stabilization

Non-native Invasive Plant Control

Emergency stabilization funds are used to control non-native invasive plants within burned areas when it can be documented that non-native invasive plants may quickly invade (gain entry) or hamper reestablishment of native vegetation or the revegetation activity. Any actions taken along these lines must comply with existing approved land management plans.

Such work may include integrated chemical, biological, mechanical, and/or hand treatment methods, as well as, post-fire detection and monitoring. Treatments for non-native invasive plants control and periodic detection can be funded until the end of 1 year following containment of the fire. The use of integrated pest management methods is preferred over chemical treatments. All treatments must conform with FWS specific policy.

Integrated Pest Management: The use of chemical, biological, mechanical, and cultural treatments necessary to minimize the establishment of non-native invasive species in conjunction with vegetative treatments or for site preparation purposed for other emergency stabilization treatments are funded through the emergency stabilization program. The herbicides proposed are approved for use on public lands. All other applicable label and environmental restrictions must be followed.

The revegetation of grasses, forbs and shrubs to prevent the establishment or reestablishment of non-native invasive species is an appropriate integrated pest management treatment.

Non-native Animal Use

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedlings. Non-native animal use should not be permitted until the vegetation has recovered or established.

- Recovery/Establishment Period - Revegetated and burned but not revegetated areas should be closed to livestock grazing for at least two growing seasons following the season in which the wildland fire occurred to promote recovery of burned perennial plants and/or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures should be made a condition or term on the grazing license or permit.
- Grazing Management After Recovery/Establishment Period - An evaluation is required at the end of the second growing season to determine whether additional livestock exclusion is required to meet emergency stabilization objectives. Additional grazing exclusion may be required to achieve emergency stabilization objectives, especially when palatable, slow-maturing shrubs are included in the emergency stabilization project. Most shrubs should not be browsed until they are able to produce viable seed. Post-establishment livestock management in burned or seeded areas should maintain both the planted species and the native species to meet field unit objectives.

- Wild horses and burros may also need to be excluded from treatment areas. Emergency stabilization funds are used for fencing or relocation (both actions must be consistent with approved land management plans and FWS wild horse and burro policy) until the area recovers. Exclusion or relocation must occur before the animals can significantly damage the remaining vegetation. If exclusion or relocation does not occur before spring green-up, exclusion or related actions should be discontinued. Additional use supervision may be required to ensure that wild horses or burros are not accidentally trapped within the treatment areas if they inadvertently gain access. It is also important to ensure that wild horses or burros do not get trapped without access to water or do damage to seeded or recovering burned areas. Care should be taken to minimize the blocking of migration or water trails with protective fences.
- Minimal Protective fences are constructed with emergency stabilization funds to protect burned areas from grazing during the recovery period for burned vegetation or the establishment period for new seedings. Protective fencing may serve as either temporary protection or as a permanent management fence. Protection fences should be placed around the perimeter of the burn to the minimum degree required, considering topography, rock outcrops, soils, existing fences, etc. Protection fences should be reused on new emergency stabilization projects after the protection period is over if feasible.
 - Protection fences are generally installed:
 - To protect a new emergency stabilization seeding from grazing during the establishment period and to manage the seeding after it is established to maintain the seeded species.
 - Where native rangeland needs a rest period from grazing, and the area does not require further special grazing management to maintain plant vigor or composition. Removal of protective fences can also be funded with emergency stabilization funds.
 - Fencing that exceeds the amount required to protect new seedings or burned area should be funded with a benefiting subactivity. The fencing of private land to keep privately owned livestock off adjacent burned or rehabilitated public lands is the responsibility of the private land owner(s). Therefore, emergency stabilization funds are not be used to fence the private/public land boundary unless state laws (e.g., herd districts are in place) require a different approach. Appropriate administrative and/or legal action should be taken against private land owners who fail to keep livestock from moving from private land onto FWS land closed for emergency stabilization purposes.
 - Total pasture or allotment exclusion from grazing (closure) are alternatives to consider in lieu of fencing. For example, if 80% of an allotment, or pasture is burned, it may be more cost-effective to close the grazing unit rather than fencing the burned area to allow 20% of the unit's former grazing capacity to be used.
 - Cattle guards, gates and warning signs may be installed on county, FWS or state roads, highways, and areas of high recreation use, where a gate would present a safety hazard to the public. Cattleguards are **not** installed with emergency stabilization funds on lightly traveled roads and two-track trails. Any cattleguard installed in conjunction with a protection fence and removed with emergency stabilization funds must be used on a future emergency stabilization projects.

Revegetation

Planting (by seeding or transplanting) for emergency stabilization in burned area is an appropriate treatment if seeding or planting of shrubs, forbs, grasses, and trees:

- Stabilizes the site and prevents less water or wind erosion,
- Reduces the invasion of non-native invasive plants, or
- Prevents critical habitat for Federal listed threatened or endangered species from being further impaired than if nothing was done.

and is prescribed to be effective within 3 years.

The use of trees as (or as part of) an emergency stabilization treatment method is permitted on a limited basis. See forest stabilization section.

It is essential that the potential for recovery of native or seeded vegetation and invasion by weeds be evaluated prior to making a decision whether to seed a burned area. Revegetation of burned areas is **not** an appropriate use of emergency stabilization funds if natural regeneration will result in a vegetation type that meets emergency stabilization and approved

land management plan objectives.

Site preparation herbicide application on burned land is funded with emergency stabilization funds if necessary for revegetation treatments. The potential for invasive non-native plant invasion is considered in developing the seed prescription. Do not include species in the seed mixture that are susceptible to herbicides if it is likely that weed control may be needed after the emergency stabilization seeding is established.

What to Plant (Native versus Non-native Plants): Species planted on burned areas must provide the protection required by plan objectives, be consistent with the appropriate approved land management plan and be in compliance with Executive Order 13112, Invasive Species, February 3, 1999. The [native-nonnative plant worksheet](#) is a useful decision tool.

Non-native seed is appropriate only if:

- Suitable native species are not available.
- The natural biological diversity is not diminished.
- Exotic and naturalized species can be confined within the proposed treatment area.
- Analysis of appropriate information (including ecological site inventory) indicates that a site may not support reestablishment of a species that was historically part of the natural environment.
- Resource management objectives cannot be met with native species.

The use of certified seed is required (if available) to insure that desired genetic traits are present. The use of "source identified seed" is recommended when native seed is collected from wildland sites to insure that a local or otherwise adapted seed source is used to revegetate the burned area.

Straw and other vegetative mulch materials (rice hulls) should be purchased as "certified weed-free" by a State agricultural agency or should be sampled and tested for noxious weeds prior to use.

Forest Stabilization

The use of trees as (or as part of) a emergency stabilization treatment is permitted, but limited to:

- Reintroducing or re-establishing native tree species and seed sources lost in a stand replacement fire, and
- Meeting treatment objectives within 3 years of fire containment.

The costs for cutting trees destroyed by fire where they are a danger to the public is appropriate, as is the use of trees in contour felling to reduce the possibility or amount of erosion.

A detailed timber salvage assessment and the costs associated with the actual salvage sale (i.e., timber inventory, contract preparation, etc.) **cannot** be charged to the emergency stabilization subactivity.

Federal Field Unit Infrastructure

Facilities

The emergency stabilization of improvements and facilities burned or damaged by fire is appropriate only for public safety and prevent further degradation to the facility (i.e., protection from rain and water damage) **not** for repair or replacement to pre-fire condition.

Facility Construction/Structural Stabilization and Clean-up

A visual inspection for hazardous conditions/materials and structural integrity of structures affected by fire is required prior to the structure being reopened or made accessible to the public. Appropriate inspections are conducted by a qualified technical specialist assigned to the BAER team or project. A written condition assessment (including hazardous materials - HAZMAT) of each affected structure is submitted as part of the approved burned area emergency response plan. Should this assessment occur following demobilization and the closure of the fire suppression accounts, it can be funded with emergency stabilization funds. Emergency stabilization funds are **not** to be used to develop reconstruction or repair plans or to initiate or complete any of the work outlined in these documents. For safety purposes, security measures required to block public access to damaged structures may be funded by Emergency Stabilization funds. Facilities utilized by burned area emergency response teams should be cleaned/repared using the fire suppression account and may include such activities as carpet cleaning, painting, etc.

Hazardous Material

Hazardous materials discovered during field assessments are secured with emergency stabilization funds. Assessment and hazardous material removal and mitigation are funded with other program funds.

Early Warning Flood/Evacuation System

Remote Automated Weather System or satellite driven systems are often times necessary to monitor rainfall amounts and intensity in moderate to high intensity burns in immediate proximity to values at risk (highways, structures, etc.). The initial installation must be done within 1 year and maintenance can be funded for 3 years following containment of the fire with emergency stabilization funds. Continued operation and maintenance after that time must be funded with other funds. Any hardware that is purchased as a result of these activities should be cached for reuse on other incidents.

The local emergency action agency is responsible for public evacuation planning, public notification, and evacuation on non-federal lands.

Experimental Technology

Experimental technology (equipment, plant materials, etc.) is **not** funded with emergency stabilization funding. Technology development and research projects are funded through the Joint Fire Science Program or other funding sources.

Fire Use

Under the Federal Wildland Fire Policy, approved by the Secretary of the Interior, January 2001, all wildland fire (both planned and unplanned ignitions) is managed by the "appropriate management action." Emergency stabilization activities and treatments may only be planned and implemented on prescribed fires that were declared wildland fires because resourced damages were caused by the fire. Emergency stabilization activities and treatments may only be planned and implemented on wildland fire for resource benefit when the Periodic Fire Assessment identified impacts caused by the fire on cultural and natural resources were outside the range of acceptable effects which in turn triggered the preparation of a Wildland Fire Situation Analysis (WFSA) to guide the selection of a different appropriate management response. Emergency stabilization will only apply to that part of the fire that occurred after the declaration of a wildland fire (prescribed fire) or after resource damage occurs and triggers a WFSA (wildland fire for resource benefits).

Damage caused by the suppression actions are repaired and charged against 9261 subactivity. All wildland fires that escape approve management actions are managed in accordance with decision in a WFSA. Emergency stabilization cost estimates are to be include in the cost analysis portion of the WFSA.

Fuels Management

Post fire fuel management activities that are designed to address post fire hazardous fuel issue are **not** appropriate for

emergency stabilization funding but may be installed with other fuel management funds. Any alternative plant species seeded to create a fire resistant vegetative fuel break (e.g., green strip) in conjunction with a stabilization seeding that increase emergency stabilization treatment costs are born by the benefiting activity (e.g., FWS fuel management subactivity).

Health and Safety

Public use facilities that pose a health or safety risk can be stabilized or closed to public use using Emergency Stabilization funds to protect human health and public safety.

- **Public Safety:** Law enforcement necessary for protection of public safety and natural resources should be accomplished within existing capability and funding authority, or by shifting priorities **not** with emergency stabilization funds. See also Public Use Management - Law Enforcement section.
- **Road, Trail, and Safety Signs:** Signs necessary to close trails, warn of pending floods, promote public safety or otherwise assist with emergency stabilization actions (directional, road, danger signs, etc.) may be procured, installed, maintained, and removed (within 3 years following containment of the fire) using emergency stabilization funds.
- **Tree Hazards:** Hazard tree mitigation can be funded to protect life and property in developed public use areas, including road corridors, and officially designated trails. Trees to be felled must have been killed or damaged by the fire. Trees damaged by fire suppression actions and deemed hazardous must be removed under fire suppression accounts.
- **Timber Salvage:** Timber salvage is **not** authorized with emergency stabilization funding.
- **Sanitation:** The removal of all trash and human-caused debris within the burned area and resulting from emergency stabilization activities shall be funded by emergency stabilization funds.
- **Trail Stabilization:** Trails are closed and only stabilized if trail closure is not possible. The emergency stabilization of any trail to a standard above its pre-fire standard is also prohibited. Appropriate trail stabilization measures which are funded with emergency stabilization funds include:
 - **Trail Slopes -** Stabilization of burned slopes in immediate proximity above and below the trail to prevent further trail degradation.
 - **Hazard Trees -** Felling of hazard trees.
 - **Waterbars (breaks) -** The absence of or insufficient waterbars may create erosion induced safety hazards. Construction of the soil, rock or log waterbars is appropriate, but waterbars damaged or destroyed as a result of suppression efforts are repaired and/or replaced with 9261 funding.

Legal Mandate Compliance

Emergency stabilization activities must comply with all legal mandates (e.g., National Environmental Policy Act, Clean Air Act, Endangered Species Act, Clean Water Act, historic and cultural resource preservation acts, etc.).

Clean Water Act

Certain emergency stabilization treatments are regulated under the Clean Water Act. The placement of earthen dams and/or straw bale or rock check-dams in stream channels may have impacts to aquatic resources and thus require authorization under Sections 404 and 401 of the Clean Water Act. Emergency stabilization activities, such as the installation of straw check-dams, rock dams, culverts, and other measures intended to stabilize ground cover and slow the rate of soil erosion in perennial and intermittent stream channels and other waters of the U.S., including wetlands, require written notification to the local Corps of Engineers District Office. Locations of these types of treatments should be included in the written notification.

The Corps of Engineers may require modifications to emergency stabilization treatments to ensure that the environmental impacts to stream channels or wetlands are minimal. In the unusual circumstances that adverse impacts of the proposed activities are more than minimal, the Corps should notify the applicant that an individual permit is required. Examples of certain emergency stabilization activities that may require Section 404 authorization include:

- Placing rocks in a stream channel to create a check dam.
- Where roads or trails are being stabilized, the Corps of Engineers needs to be notified if the activity involves the discharge of fill material into stream channels or wetlands. Installing a larger culvert to accommodate increased flow in a stream channel would require Corps notification, however, cleaning sediment clogged culverts where that material is not discharged into the waterway would not require notification or permitting.

Section 401 of the Clean Water Act allows State and Tribal governments to review Federal permits and licenses that might result in a discharge to State or Tribal waters. States or Tribes make these decisions primarily by evaluating how the activity affects their water quality standards and water-dependent resources, including salmonids. Activities in the emergency stabilization program requiring Section 404 authorization must receive certification from the State that an activity meets its water quality standards.

Monitoring

Monitoring to determine if emergency stabilization treatment objectives were met, additional treatments are needed, or the treatment is implemented properly is an integral part of all plans. Monitoring intensity should be commensurate with the complexity of the emergency stabilization treatments, level of concern or controversy associated with the emergency stabilization treatment, and compatible with approved land management plans. Monitoring needs, design and protocols are defined in the individual burned area emergency response plan treatment specifications.

Emergency stabilization funds are limited to:

- **Treatment Detection.** It is appropriate to monitor (i.e., non-native invasive plant populations) for the purpose of determining if some threshold level is reached triggering a specific cost-effective treatment. If monitoring is to be conducted to determine if a treatment is needed (i.e., invasive species control), the treatment specification must include a threshold level where the treatment is initiated (e.g., presence of Canada thistle, 10 percent cover of cheatgrass, etc.) and a practical, cost-effective management action to be undertaken (e.g., mechanical removal, broadcast herbicide application, etc). It is **not** appropriate to monitor plant (e.g., non-native invasive plant populations) or animal recovery or to assess fire effects if there is no cost effective treatment available.
- **Treatment Effectiveness.** It is appropriate to monitor whether a treatment achieved its objective (i.e., whether willow and cottonwood trees successfully survived, grew and stabilized the bank). It is **not** appropriate to monitor to determine the effects of treatment (i.e., changes in wildlife habitat structure, condition, or use).
- **Treatment Implementation.** It is appropriate to determine if the treatment was implemented according to plan specifications.

Emergency stabilization funding is **not** appropriate for:

- Monitoring to determine if the decision not to implement any treatment was appropriate (i.e., monitoring natural recovery). However, the use of an untreated area (control) in a paired comparison design to evaluate the effectiveness of a treatment is acceptable.
- Monitoring the impacts or effects of the fire (e.g., water quality monitoring to evaluate the impacts of the burn on and post fire recovery of the endangered Lahontan cutthroat trout, post-fire monitoring of threatened and endangered species presence, reproductive status and reproductive success, etc.).
- Long-term monitoring (> 3 years following containment of the fire) related to treatment longevity and effectiveness.
- Research

This type of monitoring is appropriate for, National Fire Plan, or other FWS funding.

Monitoring and evaluation to determine the effectiveness of treatments is funded for up to three years following containment of the fire. Funding requires the submittal of an annual accomplishment report on success/failure of treatments. All obligations incurred beyond the third year must be funded by other than emergency stabilization funding.

Effective monitoring methods should be used (e.g., [Fuel and Fire Effects Monitoring Guide](#), or other accepted monitoring

protocols). Cooperative efforts in monitoring the results of emergency stabilization projects are encouraged; these efforts could be with research organizations, neighboring offices, agencies, or universities.

Monitoring information and results should be retained in the project file and incorporated into the annual accomplishment report justifying additional funding if needed. Information gained in monitoring is strongly encouraged to be shared through professional papers, technical bulletins, symposia, workshops, etc.

Personnel Funding

All non-fire funded and hazard fuels personnel may charge their base 8 hours to emergency stabilization when performing emergency stabilization activities. Everyone's overtime hours will be charged to the emergency stabilization subactivity. All emergency stabilization and rehabilitation funded personnel will charge their base 8 hours to their base funding and will **not** charge their base 8 hours to emergency stabilization activities.

Personnel Safety

Public and firefighter safety is the first priority. All emergency stabilization planning and implementation actions conform with Occupational Safety and Health Administration, National Wildfire Coordinating Group, and FWS safety standards.

Public Coordination

Interested members of the public are given reasonable opportunities for input and comment on all plans. Due to the need for prompt action following a wildland fire, public participation in plan development may be more limited than with other types of non-emergency project proposals.

Recovering Emergency Stabilization Costs of Human Caused Wildland Fires

Costs associated with stabilizing burned lands that are human caused should be recovered to the extent possible from the person or persons responsible for causing the fire. Agencies will enforce rules and regulations concerning the unauthorized ignition of wildland fires, and aggressively pursue violations.

Public Use Management

FWS project leaders should consider area closures to protect public safety, natural recovery, and active emergency stabilization treatments. Burned or seeded areas may be temporarily closed to the public by excluding vehicle, bicycle, horse, and foot use if unacceptable resource damage would occur or if danger to the public is present due to fire damage or emergency stabilization activities or treatments. Land management plans should be reviewed prior to implementing emergency stabilization measures to identify other areas of special management concern (Areas of Critical Environmental Concern, outstanding natural areas, primitive areas, Wild and Scenic Rivers, National Trails, Research Natural Areas, National Conservation Areas, National Monuments, etc.) to ensure emergency stabilization treatments are consistent with management objectives for these special management areas.

Law Enforcement

Law enforcement costs funded by emergency stabilization funds are limited to protecting significant heritage sites to prevent looting. Other law enforcement activities should be accomplished within existing capability and funding authority, or by shifting priorities.

Recovering Emergency Stabilization Costs of Human Caused Wildland Fires

Costs associated with stabilizing burned lands that are human caused should be recovered to the extent possible from the

person or persons responsible for causing the fire. Agencies will enforce rules and regulations concerning the unauthorized ignition of wildland fires, and aggressively pursue violations.

Timeliness

Congress has determined that "it is in the best interest of the Nation to take swift action to stabilize burned lands." Therefore emergency stabilization treatments must be implemented, to the extent possible, before the burned site is further degraded by erosion, animal use, or undesirable vegetation becomes established. Treatments must occur at a time that insure a high or maximum probability of success. Therefore, treatment specification should address temporal effectiveness and plans should be submitted to the appropriate level of management for review and approval within the timeframes set by the individual agencies.

The [Burned Area Emergency Response \(emergency stabilization\) plan](#) must be submitted to the authorizing officer within seven calendar days after total containment of the fire. Approval/disapproval of burned area emergency response (emergency stabilization) plans at regional/state offices and shall be made within six business days of receipt by the approving office. If additional time is needed, extensions must be approved at same level as plan approval.

Funding for emergency stabilization treatments is provided for no more than one year following containment of the fire, except that emergency stabilization funding may be used for treatment effectiveness monitoring or to repair or replace emergency stabilization structures or treatments for up to three years following containment of the fire where failure to do so would imperil watershed functionality or result in serious loss of downstream values.

Threatened and Endangered Species

A burned area assessment should identify what impact the fire had to threatened and endangered species and what, if any, cost effective stabilization measures can be implemented to prevent further post fire condition degradation. In most cases little can be done. Post fire monitoring of threatened and endangered species status or recovery is **not** funded with emergency stabilization funds unless the monitoring is for the purpose of assessing the effectiveness of a specific threatened and endangered species emergency stabilization treatment and the monitoring must be specific to the treatment (e.g., It would be appropriate to monitor if cottonwoods planted to stabilize a Lahanton cutthroat trout stream bank actually stabilized the stream bank. Monitoring Lahanton populations would not be appropriate because it would be difficult or impossible to determine if the cottonwood planting had any effect on the population) .

All burned area emergency response plans should be reviewed to determine if threatened and endangered species or their habitat would be benefited or adversely affected by the implementation of emergency stabilization treatments. Field units [consult](#) with the U.S. Fish and Wildlife Service (Ecological Services Offices) or National Marine Fisheries Service, as appropriate, on all emergency stabilization actions that may affect a threatened and endangered listed species or its habitat to ensure compliance with Section 7 of the Endangered Species Act. A similar process is required for state agencies when state-listed species are involved. Timeframes for review and consultation may last several months. Therefore, every effort should be made to initiate these actions early in the emergency stabilization planning process.

Treatment Failures

Emergency stabilization funding may be used to repair or replace emergency stabilization structures or treatments for up to three years following containment of the fire where failure to do so would imperil watershed functionality or result in serious loss of downstream values. However, emergency stabilization funding cannot be used to continue seeding, plantings, and invasive plant treatments beyond one year.

An amended plan identifying the treatment failures and justifying the funding extension and additional funding needs is required.

Watershed Stabilization

Watershed stabilization include those emergency stabilization treatments necessary to protect life, property and watershed values (soils productivity and water quality). [Watershed treatments](#) may meet a prevention, control or removal strategy. Prevention strategies are treatments applied at the potential source of an emergency, to prevent an emergency from developing. Examples of prevention treatments are those applied to ground surfaces to prevent surface erosion, to control overland runoff, to trap sediment, to encourage infiltration into the soil profile, and to stabilize sites of potential deep erosion, or mass wasting. Protection strategies are based on recognition that an emergency cannot be prevented by direct application of prevention treatments to flood/debris flow source areas. Protection strategies are treatments designed to control an emergency when it happens, to slow or delay flood flows, to redistribute sediment loads, and to directly control flood runoff within channels. Removal strategies are treatments designed to remove values at risk from damage caused by increased water runoff.

Prevention Strategies:

Treatments are designed to provide effective ground cover for reducing surface erosion potential and to increase infiltration rates; to control overland runoff, thereby reducing erosion; and to protect water quality by reducing surface erosion, stabilizing residual ashes, and enhancing infiltration rates within the flood source areas.

- Aerial and Ground Seeding:
- Mulch
- Geotextures, Erosion Cloth/Soil Netting:
- Contour Trenches:
- Strip/Contour
- Lop and Scatter
- Temporary Fencing: Fencing installed on a grazing allotment or other unit to keep livestock out of burned area are funded with emergency stabilization funds **only when moving livestock is not feasible**.
- Planting Trees and Shrubs for Protection from Localized Mass Soil Erosion: Since shrubs are not considered to be effective for use in short-term stabilization of soils, this treatment is used **only in very rare circumstances** where the long-term potential for erosion occurs in immediate proximity to human property values at risk.
- Chemical Treatments:

Control Strategies:

Only treatments that create the least disturbance and have the least cost while providing for adequate drainage are prescribed under emergency stabilization. Treatments are designed to provide effective means to trap and stabilize in-channel sediments, control down cutting, maintain the integrity of channel morphology, and minimize flash flooding. The following channel treatments are eligible for emergency stabilization funding:

- Grade-control Structures:
 - Log dams and in channel felling slow flow and trap sediment
 - Sand bags, Log grade and rock grade stabilizers stabilize channels reduce undercutting
- Straw Bale and Straw Wattle Check Dams:
- Silt Fences:
- Armoring:
- Debris Removal:
- Riparian Revegetation:
- Ditch Improvements (Trash/Debris Rack, Road/Culvert Protection, etc.):
 - Increasing ditch capacity
 - Installation of trash/debris racks
 - Installation of bypasses around culverts
 - Installation of riser pipes or culverts
 - Upgrading culverts
 - Installation of larger culverts
 - Removing undersized culverts
 - Gabion debris dams
 - Energy dissipaters
 - Road closure

- Installation of Road/Trail Water Diversion Implements:
 - Rolling dips
 - Outsloping roads
 - Trail work
 - Road rocking
 - Rock bottom dips
 - Water bars
- Debris Basins, flood-water impoundments, release tanks, levees:

Removal Strategies:

Often times, it is more feasible or cost effective to move some values at risk than it is to attempt to protect those values on the site. For example, the removal of an out-building from a park or endangered fish from a stream or Federal Fish Hatchery that lies immediately adjacent to a high flood risk area. The removal of a potential property loss from the path of a predicted flood are funded via emergency stabilization funds if the following conditions are met:

- Costs of removal and relocation of property (after flood risk, back to original site) does not exceed the value at risk.
- The approved plan contains a flood risk potential map which shows the location of the property within the anticipated HIGH flood risk area.
- The property is federally owned.

Wilderness

Designated Wilderness Areas - Land management plans and FWS policy should be followed.

Wildland Fire Suppression Activity Damage Rehabilitation

Suppression activity damage is the responsibility of the incident commander and documented in the Incident Action Plan and be funded using 9261 funds. This work should be completed by the incident management team prior to final demobilization of the suppression forces whenever practical. However, it may be more cost-effective and practical to delay some repairs to improve the chance of success. For example, repair of road damage by heavy engine traffic is not practical until sufficient moisture is present. The suppression account should remain open after the containment of the fire until all fire suppression activity damage rehabilitation is completed because emergency stabilization funding **cannot** be used to pay for suppression activity damage rehabilitation.

Wildlife

Wildlife populations may continue to degrade unburned areas in and adjacent to the burned area, and may have a major effect on the success of emergency stabilization treatments. Agreements with the appropriate wildlife management agencies (if needed) should be developed before the emergency stabilization treatments are implemented, prescribing how wildlife is managed. The plan should identify what measures are needed to prevent further burned area degradation from wildlife use, and treatment specifications should address timely implementation. If wildlife control techniques are not installed before next season's green-up, a majority of the animal damage will have occurred, there will probably be enough forage in the burned area to prevent any concentrated damage in the unburned area, and treatment after green-up would not be cost effective.

Treatments to mitigate the loss of wildlife habitat are **not** appropriate for emergency stabilization funding. See also Threatened and Endangered Species.

REHABILITATION STANDARDS

Rehabilitation actions are intended to repair or improve lands damaged directly by the wildland fire and unlikely to recover naturally from severe wildland fire damage by emulating historic or pre-fire ecosystem structure, function, diversity, and dynamics according to approved land management plans; restore or establish healthy, stable ecosystems in the burned area, even if these ecosystems cannot fully emulate historic or pre-fire conditions as specified in approved land management plans, or repair or replace fire damage to minor operating facilities. Rehabilitation ([subactivity 9262](#)) funds can only be used for rehabilitation needs assessments and rehabilitation plan development and implementation on FWS lands within the perimeter of the fire or impact area downstream from the burned area. The use of rehabilitation funding is further limited based on treatment effectiveness and to improve economic efficiencies.

Cadastral Survey

Project areas have cadastral survey work done with rehabilitation funds only where land ownership adjacent to proposed rehabilitation treatments is in question and not to answer long-standing, large-scale ownership questions. Section and quarter corners are located and flagged for avoidance prior to any surface disturbing activity that could result in damage to or destruction of the corner.

Cultural Resources

The rehabilitation and restoration of cultural resources to pre-fire condition is **not** appropriate for rehabilitation funding.

Ecological Rehabilitation

Non-native Invasive Plant Control

Rehabilitation funds are used to treat non-native invasive plants within burned areas when the treatments are consistent with approved land management plans.

Such work may include integrated chemical, biological, mechanical, and/or hand treatment methods, as well as, post-fire detection and monitoring. Treatments for weed control and periodic detection of known vectors can be funded until 3 years following containment of the fire. Other funding sources for weed control must be found after three years. The use of integrated pest management methods is preferred over chemical treatments. All treatments must conform with FWS policy.

Integrated Pest Management: The use of chemical, biological, mechanical, and cultural treatments necessary to minimize the establishment of non-native invasive species in conjunction with vegetative treatments or for site preparation purposed for other rehabilitation treatments are funded through the rehabilitation program. The use of herbicides to control post-fire non-native invasive species is appropriate if:

- The herbicides proposed are approved for use on FWS lands. All other applicable label and environmental restrictions must be followed.
- The application of herbicides is necessary to keep non-native invasive plants from invading and dominating the post-fire environment.
- The application of herbicides is necessary for site preparation before seeding or planting.
- The use of herbicides funded by the rehabilitation program is limited to 3 years following total fire containment control.

The revegetation of grasses, forbs and shrubs to prevent the establishment or reestablishment of non-native invasive species is an appropriate integrated pest management treatment.

Non-native Animal Use

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedlings. Non-native animal use should not be permitted until the vegetation has recovered or established.

- Recovery/Establishment Period - Rehabilitated areas should be closed to livestock grazing an appropriate period following the season in which the rehabilitation occurred to facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures should be made a condition or term on the grazing license or permit.
- Grazing Management After Rehabilitation - An evaluation is required after the recovery period to determine whether additional livestock exclusion is required to meet rehabilitation objectives. Additional grazing exclusion may be required to achieve rehabilitation objectives, especially when palatable, slow-maturing shrubs are included in the rehabilitation project. Most shrubs should not be browsed until they are able to produce viable seed. Post-establishment livestock management in burned or seeded areas should maintain both the planted species and the native species to FWS objectives.
- Wild horses and burros may also need to be excluded from treatment areas. Rehabilitation funds are used for fencing or relocation (both actions must be consistent with approved land management plans and FWS wild horse and burro policy) until the area is rehabilitated. Exclusion or relocation must occur before the animals can significantly damage the rehabilitated vegetation. Additional use supervision may be required to ensure that wild horses or burros are not accidentally trapped within the treatment areas if they inadvertently gain access. It is also important to ensure that wild horses or burros do not get trapped without access to water or do damage to seeded or recovering burned areas. Care should be taken to minimize the blocking of migration or water trails with protective fences.
- Rehabilitation funds can be used for minimal protective fences and repair and replacement of management fences. Protective fencing may serve as either temporary protection or as a permanent management fence. Protection fences should be placed around the perimeter of the burn to the minimum degree required, considering topography, rock outcrops, soils, existing fences, etc. Protection fences should be reused on new rehabilitation projects after the protection period is over if feasible.
 - Protection fences are generally installed:
 - To protect a new rehabilitation seeding from grazing during the establishment period and to manage the seeding after it is established to maintain the seeded species.
 - Where native rangeland needs a rest period from grazing, and the area does not require further special grazing management to maintain plant vigor or composition. Removal of protective fences can also be funded with rehabilitation funds if done within the 3 year funding window.
 - Fencing that exceeds the amount required to protect new seedlings or burned area should be funded with a benefiting subactivity. The fencing of private land to keep privately owned livestock off adjacent burned or rehabilitated public lands is the responsibility of the private land owner(s). Therefore, rehabilitation funds are **not** be used to fence the private/public land boundary unless state laws (e.g., herd districts are in place) require a different approach. Appropriate administrative and/or legal action should be taken against private land owners who fail to keep livestock from moving from private land onto FWS land closed for rehabilitation purposes.
 - Total pasture or allotment exclusion from grazing (closure) are alternatives to consider in lieu of fencing. For example, if 80% of an allotment, or pasture is burned, it may be more cost-effective to close the grazing unit rather than fencing the burned area to allow 20% of the unit's former grazing capacity to be used.
 - Cattle guards, gates and warning signs may be installed on county, FWS or state roads, highways, and areas of high recreation use, where a gate would present a safety hazard to the public. Cattleguards are **not** installed with rehabilitation funds on lightly traveled roads and two-track trails. Any cattleguard installed in conjunction with a protection fence and removed with rehabilitation funds must be used on a future rehabilitation projects.

Revegetation

Decision to Revegetate: Rehabilitation planting (by seeding or transplanting) in burned areas is an appropriate use of rehabilitation funds if revegetation:

- Repairs or improves lands damaged directly by the wildland fire and unlikely to recover naturally from severe wildland fire damage by emulating historic or pre-fire ecosystem structure, function, diversity, and dynamics according to approved land management plans,
- Restores or establishes healthy, stable ecosystems in the burned area, even if these ecosystems cannot fully emulate historic or pre-fire conditions as specified in approved land management plans, or
- Facilitates the natural succession of vegetative communities which would likely be subject to immediate and aggressive invasion of non-native invasive species after the fire.

The use of trees as (or as part of) a rehabilitation treatment is permitted. See the forest rehabilitation section.

It is essential that the potential for recovery of native or seeded vegetation and invasion by weeds be evaluated prior to making a decision whether to revegetate a burned area. Revegetation of burned areas is **not** an appropriate use of rehabilitation funds if natural regeneration will result in a vegetation type that meets rehabilitation and approved land management plan objectives.

Herbicide application on burned land is funded with rehabilitation funds if invasive non-native plants are expected to increase to an unacceptable level or for site preparation purposes for other revegetation treatments. The potential for invasive non-native plant invasion is considered in developing the seed prescription. Don't include forb, shrub or grass species in the seed mixture that are susceptible to herbicides if it is likely that weed control may be needed after the rehabilitation seeding is established.

What to Plant (Native versus Non-native Plants): Species planted on burned areas must provide the protection required by rehabilitation plan objectives, be consistent with the appropriate approved land management plan and be in compliance with Executive Order 13112, Invasive Species, February 3, 1999. The [native-nonnative plant worksheet](#) is a useful decision tool.

Non-native seed is appropriate only if:

- Suitable native species are not available.
- The natural biological diversity is not diminished.
- Exotic and naturalized species can be confined within the proposed treatment area.
- Analysis of appropriate information (including ecological site inventory) indicates that a site may not support reestablishment of a species that was historically part of the natural environment.
- Resource management objectives cannot be met with native species.

The use of certified seed is required to insure that desired genetic traits are present. The use of "source identified seed" is recommended when native seed is collected from wildland sites to insure that a local or otherwise adapted seed source is used to revegetate the burned area.

Straw and other vegetative mulch materials (rice hulls) should be purchased as "certified weed-free" by a State agricultural agency or should be sampled and tested for noxious weeds prior to use.

Forest Rehabilitation

Forest ecosystem rehabilitation should be considered if the ecosystem is unlikely to recover naturally from wildland fire damage. Tree planting is limited to the following and must be addressed in an approved land management plan:

- Facilitating the succession and stabilization of forest ecosystems.
- Re-establishing habitat for Federally listed threatened or endangered species, or other special status species.
- Reintroducing or re-establishing native tree species and seed sources lost in a stand replacement fire.

A detailed timber salvage assessment and the costs associated with the actual salvage sale (i.e., timber inventory,

contract preparation, etc.) **cannot** be charged to the rehabilitation account.

Equipment

Capitalized equipment cannot be purchased with rehabilitation funds unless it can be documented that purchasing equipment is more cost effective than renting equipment and is in the best interest of the government. Capitalized or non-capitalized equipment is not purchased with rehabilitation funds without review and written approval by the appropriate FWS representative.

Experimental Technology

Experimental technology (equipment, plant materials, etc.) is **not** funded with rehabilitation funding. Technology development or research projects are funded through the Joint Fire Science Program or other funding sources.

Federal Field Unit Infrastructure

Minor Facilities

The repair or replacement of minor improvements and facilities (e.g., kiosks, fences, interpretive or boundary signs, recreation facilities, water control structures, corrals, guzzlers, trails, permanent long-term monitoring plots, etc.) burned or damaged by fire to pre-fire specifications is authorized with the use of rehabilitation funds only if these improvements or facilities are addressed in an approved land management plan. It does not include the construction of new or upgraded facilities that did not exist before the fire. Rehabilitation and maintenance of burned improvements beyond 3 years from containment of the fire is funded by other program funding. Minor facility repair or replacement is addressed in the rehabilitation plan.

Major Facilities

Replacement or repair of major facilities (e.g., visitor, centers, residential structures, administration offices, work centers or similar facilities and their contents) with rehabilitation funds is prohibited.

Fire Use

Under the Federal Wildland Fire Policy, approved by the Secretary of the Interior, January 2001, all wildland fire (both planned and unplanned ignitions) is managed by the "appropriate management action." Rehabilitation treatments may only be planned and implemented on prescribed fires that were declared wildland fires because ecological resource damages were caused by the fire. Rehabilitation treatments may only be planned and implemented on wildland fire for resource benefit when the Periodic Fire Assessment identified impacts caused by the fire on ecological resources were outside the range of acceptable effects which in turn triggered the preparation of a WFSA to guide the selection of a different appropriate management response. Rehabilitation will only apply to that part of the fire that occurred after the declaration of a wildland fire (prescribed fire) or after resource damage occurs and triggers a WFSA (wildland fire for resource benefits).

Damage caused by the suppression actions are repaired and charged to 9261. All wildland fires that escape approved management actions are managed in accordance with decision in a WFSA. Rehabilitation cost estimates are to be included in the cost analysis portion of the WFSA.

Fuels Management

Post fire fuel management activities that are designed to address post fire hazardous fuel issue are **not** appropriate for rehabilitation funding but may be implemented with hazardous fuel management funds. Any alternative plant species

seeded to create a fire resistant vegetative fuel break (e.g., green strip) in conjunction with a rehabilitation seeding that increases treatment costs are born by the benefiting activity (e.g., 9263 or 9264 subactivity).

Legal Mandate Compliance

Rehabilitation activities must comply with all legal mandates (e.g., National Environmental Policy Act Clean Air Act, Endangered Species Act, Clean Water Act, historic and cultural resource preservation acts, etc.).

Clean Water Act

Certain rehabilitation treatments are regulated under the Clean Water Act. The placement of habitat improvement structures in stream channels may have impacts to aquatic resources and thus require authorization under Sections 404 and 401 of the Clean Water Act. Rehabilitation activities in perennial and intermittent stream channels require written notification to the local Corps of Engineers District Office. Locations of these types of treatments should be included in the written notification.

The Corps of Engineers may require modifications to rehabilitation treatments to ensure that the environmental impacts to stream channels or wetlands are minimal. In the unusual circumstances that adverse impacts of the proposed activities are more than minimal, the Corps should notify the applicant that an individual permit is required. Examples of certain rehabilitation activities that may require Section 404 authorization include:

- Placing rocks and woody debris in a stream channel to enhance ecosystem function.
- Where riparian habitat rehabilitation is being initiated, the Corps of Engineers needs to be notified if the activity involves the discharge of fill material into stream channels or wetlands. Installing a larger culvert to accommodate increased flow in a stream channel would require Corps notification, however, cleaning sediment clogged culverts where that material is not discharged into the waterway would not require notification or permitting.

Section 401 of the Clean Water Act allows State and Tribal governments to review Federal permits and licenses that might result in a discharge to State or Tribal waters. Activities in the rehabilitation program requiring Section 404 authorization must receive certification from the State that an activity meets its water quality standards.

Monitoring

Monitoring to determine if rehabilitation treatment objectives were met or additional treatments are needed is an integral part of all rehabilitation plans. Monitoring intensity should be commensurate with the complexity of the rehabilitation treatments, level of concern or controversy associated with the rehabilitation treatment, and compatible with approved land management plans. Monitoring needs, design and protocols are defined in the individual rehabilitation plan treatment specifications.

Rehabilitation funds are **limited** to:

- Treatment Detection. It is appropriate to monitor (e.g., non-native invasive plant populations) for the purpose of determining if some threshold level is reached triggering a specific cost-effective treatment. If monitoring is to be conducted to determine if a treatment is needed (i.e., invasive species control), the treatment specification must include a threshold level where the treatment is initiated (e.g., presence of Canada thistle, 10 percent cover of cheatgrass, etc.) and a practical, cost-effective management action to be undertaken (e.g., mechanical removal, broadcast herbicide application, etc). It is **not** appropriate to monitor plant (e.g., non-native invasive plant populations) or animal recovery or to assess fire effects if there is no cost effective treatment available.
- Treatment Effectiveness. It is appropriate to monitor whether a treatment achieved its objective (i.e., whether willow and cottonwood trees successfully survived, grew and provided riparian habitat). It is **not** appropriate to monitor to determine the effects of the treatment (e.g., changes in wildlife habitat structure, condition, or use).

- **Treatment Implementation.** It is appropriate to determine if the treatment was implemented according to plan specifications.

Rehabilitation funding is **not** appropriate for:

- Monitoring to determine if the decision not to implement any treatment was appropriate (i.e., monitoring natural recovery). However, the use of an untreated area (control) in a paired comparison design to evaluate the effectiveness of a treatment is acceptable.
- Monitoring the impacts or effects of the fire (e.g., water quality monitoring to evaluate the impacts of the burn on and post fire recovery of the endangered Lahontan cutthroat trout, post-fire monitoring of threatened and endangered species presence, reproductive status and reproductive success, etc.).
- Long-term monitoring (> 3 years following containment of the fire) related to treatment longevity and effectiveness and the plant community dynamics of the project.
- Research

This type of monitoring is appropriate for National Fire Plan or other FWS funding.

Monitoring and evaluation to determine the effectiveness of treatments is funded for up to three years following containment of the fire. Funding for a second or third requires the submittal of an annual accomplishment report on success/failure of treatments each year. All obligations incurred beyond the third year must be funded by other than rehabilitation subactivity funding.

Effective monitoring methods should be used (e.g., [Fuel and Fire Effects Monitoring Guide](#), or other accepted monitoring protocols). Cooperative efforts in monitoring the results of rehabilitation projects are encouraged; these efforts could be with research organizations, neighboring offices, agencies, or universities.

Monitoring information and results should be retained in the project file and incorporated into the annual accomplishment report justifying additional funding if needed. Information gained in monitoring is strongly encouraged to be shared through professional papers, technical bulletins, symposia, workshops, etc.

Personnel Funding

All non-fire funded and hazard fuels personnel may charge their base 8 hours to rehabilitation when performing rehabilitation activities. Because rehabilitation is a non-emergency activity, careful planning should eliminate any need for overtime. But if overtime is needed, everyone's overtime hours will be charged to the rehabilitation subactivity. All emergency stabilization and rehabilitation funded personnel will charge their base 8 hours to their base funding and will **not** charge their base 8 hours to rehabilitation activities.

Personnel Safety

Public and firefighter safety is the first priority. All rehabilitation planning and implementation actions conform with Occupational Safety and Health Administration, National Wildfire Coordinating Group, and FWS safety standards.

Public Coordination

Interested members of the public are given reasonable opportunities for input and comment on all rehabilitation plans. Because rehabilitation is not an emergency, public participation in rehabilitation plan development should be the same as other non-emergency project proposals.

Public Use Management

FWS project leaders should consider area closures to protect public safety, natural recovery, and active emergency stabilization or rehabilitation treatments. Burned or seeded areas may be temporarily closed to the public by excluding vehicle, bicycle, horse, and foot use if unacceptable resource damage would occur or if danger to the public is present due to fire damage or rehabilitation activities. Land management plans should be reviewed prior to implementing rehabilitation measures to identify other areas of special management concern (Areas of Critical Environmental Concern, outstanding natural areas, primitive areas, Wild and Scenic Rivers, National Trails, Research Natural Areas, National Conservation Areas, National Monuments, etc.) to ensure rehabilitation treatments are consistent with management objectives for these special management areas.

Law Enforcement

Law enforcement activities should be accomplished within existing capability and funding authority, or by shifting priorities. Law enforcement **cannot** be funded by law enforcement.

Recovering Rehabilitation Costs of Human Caused Wildland Fires

Costs associated with rehabilitating burned lands that are human caused should be recovered to the extent possible from the person or persons responsible for causing the fire. The FWS will enforce rules and regulations concerning the unauthorized ignition of wildland fires, and aggressively pursue violations.

Timeliness

Treatment must occur at a time that insure a high or maximum probability of success. Therefore, treatment specifications should address temporal effectiveness and the [rehabilitation plan](#) should be submitted to the Regional Director for approval before the end of the fiscal year in order for funding consideration in the next fiscal year.

Threatened and Endangered Species

A burned area assessment should identify what impact the fire had to threatened and endangered species and what, if any, cost effective rehabilitation measures (e.g., replacement of burned cavity trees with of artificial red-cockaded woodpecker nests cavities in live pine trees) can be implemented to rehabilitate habitat. Post fire monitoring of threatened and endangered species status or recovery is **not** funded with rehabilitation funds unless the monitoring is for the purpose of assessing the effectiveness of a specific threatened and endangered species rehabilitation treatment and the monitoring must be specific to the treatment (e.g., It would be appropriate to monitor if cottonwoods planted to rehabilitate a Lahanton cutthroat trout stream bank habitat propagated and grew. Monitoring Lahanton populations would not be appropriate because it would be difficult or impossible to determine if the cottonwood planting had any effect on the population) .

All rehabilitation plans should be reviewed to determine if threatened and endangered species or their habitat would be benefited or adversely affected by the implementation of rehabilitation treatments. Field units [consult](#) with the U.S. Fish and Wildlife Service (Ecological Services Offices) or National Marine Fisheries Service, as appropriate on all rehabilitation actions that may affect a threatened and endangered listed species or its habitat to ensure compliance with Section 7 of the Endangered Species Act. A similar process may be required by state agencies when state-listed species are involved. Timeframes for review and consultation may last several months. Therefore, every effort should be made to initiate these actions early in the rehabilitation planning process.

Treatment Failures

Treatments (seedings, erosion control structures, etc.) installed under an approved rehabilitation plan sometimes fail. If rehabilitation treatments fail, retreatment (reseeding or reconstruction) may be considered for 3 years after containment of the fire. All retreatments must be approved by the appropriate FWS level after determination that the proposed actions are still required to meet rehabilitation objectives. Retreatment of seedings, where only one component of the seed was unsuccessful but rehabilitation objectives were met, may not be cost effective. Proper timing and planting techniques

should minimize the chances of project failure and the need for retreatment.

Wilderness

Designated Wilderness Areas - Land management plans and FWS policy should be followed.

Wildland Fire Suppression Activity Damage Rehabilitation

Suppression activity damage is the responsibility of the incident commander, documented in the Incident Action Plan and funded using 9261 funds. This work should be completed by the incident management team prior to final demobilization of the suppression forces whenever practical. However, it may be more cost-effective and practical to delay some repairs to improve the chance of success (e.g., repair of road damage by heavy engine traffic is not practical until sufficient moisture is present). The 9261 account should remain open after the control of the fire until all fire suppression activity damage rehabilitation is completed because rehabilitation funding **cannot** be used to pay for suppression activity damage rehabilitation.

Wildlife

Wildlife populations are affected by habitat lost in wildland fires and wildlife use may have a significant effect on the success of rehabilitation treatments.

- Habitat Loss and Replacement - Rehabilitation treatments must be consistent with wildlife habitat management objectives in approved habitat management plans. As with treatments, a combination of criteria including cost, adaptability, probability of successful establishment, etc., should be considered before finalizing a prescription in important wildlife habitats.
- Wildlife Management during Recovery/Establishment Period - Wildlife may cause damage to rehabilitated area during the recovery and/or seeding establishment period. Agreements with the appropriate wildlife management agencies (if needed) should be developed before the rehabilitation treatments are implemented, prescribing how wildlife are managed. The rehabilitation plan should identify what measures are needed to protect rehabilitation areas from wildlife use, and treatment specifications should address timely implementation.

PLAN TEMPLATE INSTRUCTIONS

The Burned Area Emergency Response (emergency stabilization) and Rehabilitation Plan templates were developed to facilitate plan development, review, implementation, and coordination. It can be expanded or contracted as needed. Key sections of the plans are:

- Burned Area Assessment Report (Appendix I) - These reports provide the foundation for treatment specifications and the information necessary for agency administrators to determine if the treatment specification are compatible with land management planning and appropriate for emergency stabilization funding.
- Individual Treatment Specification (Part F) - The individual specifications provide the detailed description of what emergency stabilization activities and/or treatments are recommended and how the effectiveness of each treatment is monitored.
- Environment Compliance (Appendix II) - This section documents the environmental compliance process used.

First download 3 WordPerfect (.wpd) files (also accessible with MSWord 97 or greater):

- [esplan.wpd](#) - master Burned Area Emergency Response Plan template
- [rplan.wpd](#) - master Rehabilitation Plan template
- [specification.wpd](#) - individual treatment specification file
- [assessment.wpd](#) - individual fire damage assessment report file

Open the appropriate plan template file in Wordperfect, MSWord etc.

Find and replace all YYYYYY with the name of the fire. Find and replace all XXXXX with the name of the specific field unit. (Edit/Find and Replace)

Throughout the plan replace all italics text with requested or plan specific information. See Individual Section Instruction below.

The following rich text format (.rtf) files are needed for emergency stabilization and rehabilitation planning and plan reporting

- [native-nonnative.rtf](#) - Native/non-native Plant Worksheet
- [cost-risk.rtf](#) - Cost/Risk Analysis

Individual Section Instructions

REVIEW AND APPROVAL PAGE

Obtain the appropriate approval(s) and concurrence(s).

COVER PAGE

Replace the italic text with the requested information.

EXECUTIVE SUMMARY

Replace the italic text with the requested information. Replace all examples with plan specific information.

TABLE OF CONTENTS

When the plan is completed, complete or generate a page numbers. (Tools/Reference/Table of Contents)

PART A - FIRE LOCATION AND BACKGROUND INFORMATION

Fill in the table and replace italics with specific information.

PART B - NATURE OF PLAN

Check the appropriate box.

PART C - EMERGENCY STABILIZATION AND REHABILITATION ASSESSMENT

Replace the italic objectives with the plan specific objectives.

PART D - TEAM ORGANIZATION, MEMBERS, AND RESOURCE ADVISORS

Fill in the tables with the appropriate team member and resource advisor name(s).

PART E - SUMMARY OF ACTIVITIES AND COSTS

Insert the correct date. Fill in the Specification Cost Summary table from the individual activity or treatment Specifications in PART F. Completed only after all Individual Treatment Specifications are inserted in PART F.

PART F - INDIVIDUAL SPECIFICATIONS

Fill in all information in all sections (I, II, III) of the individual Specification. The individual Fire Assessment Damage reports provide most of the necessary information. Insert as many Individual Treatment Specifications ([specifications.wpd](#)) as necessary.

PART G - POST-REHABILITATION REQUIREMENT

Identify the post-stabilization actions and estimated costs and funding source(s) that must continue following curtailment of emergency stabilization or rehabilitation subactivity funding.

PART H - CONSULTATIONS

List all consultations made during the preparation of the plan.

APPENDIX I - BURNED AREA ASSESSMENT REPORTS

List all the necessary individual Burned Area Assessment Reports that follow.

Insert all necessary Burned Area Assessment Reports ([assessment.wpd](#)) developed from field reconnaissance. Title each assessment appropriately and complete all sections.

APPENDIX II - ENVIRONMENTAL COMPLIANCE

Replace the italic text with the requested information and list partners and neighbors consulted. Complete all checklists and obtain all necessary signatures.

APPENDIX III - MAPS

Insert all maps.

APPENDIX V - SUPPORT DOCUMENTS

Insert all photo documentation.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington, D.C. 20240

In Reply Refer to:
ANRS/DNR-NR-FM/014201

Memorandum

To: Regional Directors, Region 1-7

From: Director

Subject: Burned Area Emergency Stabilization and Rehabilitation Policy and Procedures Update

In response to the January 13, 2003, Wildland Fire Leadership Council's BAER/ESR funding process decision (http://www.fireplan.gov/wflc_nfp_meetnote_1_13.html) and May 5, 2003, Wildland Fire Emergency Stabilization and Rehabilitation Policy and Procedures memorandum from the Assistant Secretary- Policy, Management and Budget (attached) the U.S. Fish and Wildlife Service has revised its burned area emergency stabilization and rehabilitation policy and procedures. This memorandum supercedes FWSCNWR-NR-FM/006098.

Beginning in Fiscal Year 2004, emergency stabilization and rehabilitation activities and treatment will be funded from two separate subactivities. Also, separate emergency stabilization and/or rehabilitation project plans are required for all burned areas needing emergency stabilization and/or rehabilitation, respectively. The project leader in charge of the burned Service lands is responsible for plan development and implementation. All plans must be compatible with approved Service land use plans and be compliant with applicable laws, policies, and agreements.

Regions must institute plan development and approval procedures to meet the following deadlines. It is imperative that emergency stabilization activities begin as soon as possible; therefore, the initial project plan must be submitted for approval/disapproval within seven calendar days after total containment of the fire with approval/disapproval within six business days (if additional time is needed, extensions may be negotiated with those having approval authority). Non-emergency rehabilitation plan initial submission and approval should be completed by the end of the first fiscal year in order to be considered for funding in the next fiscal year. The Regional Director is responsible for plan approval/disapproval if cost estimates are less than \$500,000. In addition, the Regional Fire Management

Coordinator must concur in writing that the plan fits the technical definition for use of emergency stabilization or rehabilitation subactivity funds. Plans costing more than \$500,000 are approved by the Chief, National Wildlife Refuge System, for National Wildlife Refuges or Assistant Director, Fisheries and Habitat Conservation, for National Fish Hatcheries.

All plan activities and treatments are monitored according to plan specifications and annual and final accomplishment reports are required. The project leader's supervisor is responsible for plan implementation and reporting oversight.

Emergency stabilization funding is provided for no more than one year following total containment of the fire. Emergency stabilization funding can be used for up to three years following total containment of the fire for treatment effectiveness monitoring and to repair or replace emergency stabilization structures or treatments where failure to do so would imperil watershed functionality or result in serious loss of downstream values. However, emergency stabilization funding cannot be used to continue seeding, plantings, and invasive plant treatments beyond one year. Continued treatment funding beyond the first year requires an approved plan amendment including monitoring documentation justifying the additional funding request and data entry into the National Fire Plan Operations and Reporting System (NFPORS) Restoration and Rehabilitation (R&R) module. Continued treatment effectiveness monitoring funding beyond the first year requires an annual accomplishment report including monitoring documentation and data entry into the NFPORS R&R module.

Rehabilitation funding is provided for no more than three years. All rehabilitation activities and treatments from BLM, BIA, NPS and FWS will be funded on a competitive priority basis using common criteria as established by the National Coordinators in consultation with Office of Wildland Fire Coordination. All activities and treatments will be reviewed at the end of each fiscal year and funded with the next fiscal year's funds. Funding can only be expended on approved activities or treatments and only in the approved fiscal year. Future year funding of activities and treatments must be resubmitted for funding approval each fiscal year. Any rehabilitation activity or treatment for years two or three without written monitoring documentation will not be funded.

The Service's Fire Management Branch located at the National Interagency Fire Center in Boise, Idaho, is responsible for budgetary and accomplishment tracking and will assign an individual project charge code to each project plan after an electronic copy of an approved plan is forwarded to the Fire Management Branch Chief and all appropriate NFPORS R&R module entries are completed. All emergency stabilization and rehabilitation project charge codes will be closed one year following total containment of the fire, and at the end of each fiscal year, respectively. A new project charge code will be issued after receipt of all necessary plan amendments, annual accomplishment reports, and appropriate NFPORS R&R module entries are completed. An electronic copy of the final accomplishment report will be sent to the Fire Management Branch to complete the project.

The Burned Area Emergency Stabilization and Rehabilitation chapter in the Service s Fire Management Handbook provides additional implementation and operational guidance (e.g., plan templates, program standards, etc.).

If you have additional questions please contact Mr. Bill Leenhouts, Fire Management Specialist, Fire Management Branch, at 208-387-5584.

/s/ Steve Williams

Attachment

cc: 3251-MIB/ANRS
670-ARLSQ/ANRS-DNRS
570-ARLSQ/ANRS-NR
570-ARLSQ/ANRS-NR-FM
Regional Fire Management Coordinators

FWS/ANRS-NR-FM/BLeenhouts:kem:9/8/03:703-358-2043
S/Control Correspondence/2003/014201



Back

Subactivity: 9142 - EMERGENCY STABILIZATION

Emergency stabilization is planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life or property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of and or resources. Emergency stabilization funding is provided for no more than one year following total containment of the fire, except that emergency stabilization funding can be used for up to three years following total containment of the fire for treatment effectiveness monitoring and to repair or replace emergency stabilization structures or treatments where failure to do so would imperil watershed functionality or result in serious loss of downstream values. However, emergency stabilization funding cannot be used to continue seeding, plantings, and invasive plant treatments beyond one year. Continued treatment funding beyond the first year requires an approved plan amendment including monitoring documentation justifying the additional funding request and data entry into the National Fire Plan Operations and Reporting System (NFPORS) Restoration and Rehabilitation (R&R) module. Continued treatment effectiveness monitoring funding beyond the first year requires an annual accomplishment report including monitoring documentation and data entry into the NFPORS R&R module. Emergency stabilization plans will conform with established interagency [emergency stabilization standards](#).

The Fire Management Branch in Boise, Idaho, is responsible for budgetary and accomplishment tracking and will assign an individual project charge code to each Burned Area Emergency Response (emergency stabilization) plan after an electronic copy of and an approved plan is forwarded to the Fire Management Branch Chief in Boise, Idaho, and all appropriate National Fire Plan Operations and Reporting System Rehabilitation and Restoration (NFPORS R&R) module entries are completed. All emergency stabilization project charge codes will be closed one year following total containment of the fire and a new project charge code will be issued after receipt of all necessary plan amendments, annual accomplishment reports and appropriate NFPORS R&R module entries are completed. An electronic copy of the final accomplishment report will be sent to the Fire Management Branch to complete the project.

[Back](#)

Subactivity: 9262 - Rehabilitation

Rehabilitation is post-fire efforts to repair or improve lands unlikely to recover to a management approved condition for wildland fire damage, or to repair or replace minor facilities damaged by fire. Rehabilitation funding is provided for no more than three years. All rehabilitation activities and treatments from the BLM, BIA, NPS and FWS will be funded on a competitive priority basis using [common criteria](#) as established by the National Coordinators in consultation with Office of Wildland Fire Coordination. All activities and treatments will be reviewed at the end of each fiscal year and funded with the next fiscal year's funds. Funding can only be expended on approved activities or treatments and only in the approved fiscal year. Future year funding of activities and treatments must be resubmitted for funding approval each fiscal year. Any rehabilitation activity or treatment for years two or three without written monitoring documentation will not be funded. Rehabilitation plans will conform with established interagency [rehabilitation standards](#).

The Fire Management Branch in Boise, Idaho, is responsible for budgetary and accomplishment tracking and will assign an individual project charge code to each rehabilitation plan after an electronic copy of the approved plan is forwarded to the Fire Management Branch Chief in Boise, Idaho, all appropriate National Fire Plan Operations and Reporting System Rehabilitation and Restoration (NFPORS R&R) module entries are completed and one or more activities or treatments are selected using the common criteria. All rehabilitation project charge codes will be closed at the end of each fiscal year, and a new project charge code will be issued after receipt of all necessary plan amendments, annual accomplishment reports and appropriate NFPORS R&R module entries are completed. An electronic copy of the final accomplishment report will be sent to the Fire Management Branch to complete the project.



REHABILITATION FUNDING CRITERIA

In addition to line officer (Project Leader, Regional Director and Chief, National Wildlife Refuge System for NWRs or Assistant Director, Fisheries and Habitat Conservation for NFHs if necessary) approval and Regional Fire Management Coordinator concurrence, the following procedural items must be completed by the beginning of each fiscal year to qualify for rehabilitation funding consideration:

Back

- NFPORS data entry completed
- Receipt of electronic versions of monitoring and accomplishment reports by the Fire Management Branch, Boise, Idaho, to receive subsequent years funding (multi-year treatments and activities)

The following points system will be used to prioritize rehabilitation funding among the Bureau of Land Management, National Park Service, Bureau of Indian Affairs and U.S. Fish and Wildlife Service:

- Supports approved threatened and endangered species recovery plans (2 points).
- There are partners and/or cooperators benefiting from the implementation of the plan (2 points)
- The partners and/or cooperators are contributing funds or in kind services to implement the plan (< 50 Percent = 1 Point; 50+ Percent = 2 Points)
- The treatment or activity is contracted (< 50 Percent = 1 Point; 50+ Percent = 2 Points)
- The treatment or activity is in a Wildland Urban Interface affected community (2 points)
- A treatment or activity designed to achieve a resource objective(s) (2 points). One designed to repair or replace a minor facility (0 points)
- The treatment or activity spans more than one year and there is a risk of losing a previous year's investment (2 points)
- Funding requested for a treatment or activity that was funded in a previous year but was not completed (minus 2 points)